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Original Articles

THE USE OF DIGESTIVE FERMENTS IN MEDICINE *

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The primary digestion is accomplished through the action on the foodstuffs of certain ferments. The action *in the case of each and all of these ferments is that of* hydrolysis. Different foods require for their hydrolysis the attack of different sorts of ferments, and the organism is fortunately provided with a variety of these secretions.

It is somewhat remarkable that the several ferments operate unfavorably on each other. This is partly owing to the nature of the ferments and partly owing to the conditions under which they are secreted. Thus, ptyalin, an important factor in the digestion of starch, acts for the most part in the stomach previous to the free secretion of acid gastric juice, which inhibits the ptyalin; and the gastric ferments, in their acid medium, are in turn made inactive through the secretions entering the duodenum. It will thus be seen that the administration of digestive ferments as medicaments is open to physiologic objections. It cannot be denied that ptyalin, certain pancreatic preparations and some of the diastases are possessed of a certain amount of power in the conversion of starch into maltose and dextrin when thoroughly mixed with carbohydrate food at the time of ingestion. Practically the activity of all these substances ends as soon as the gastric secretion has become mixed with the stomach contents.

It would seem reasonable that when dealing with cases in which there is a very low gastric secretion, or none at all, these preparations would prove of material advantage to patients. It is presumable that they have some beneficial effects, but it is not considerable. At least such is the conclusion reached after the study of the digestion of patients treated with these ferments.

Not infrequently patients with low gastric secretion who are given extracts of pancreas, extracts of malt and other forms of diastase represent themselves as feeling better from the use of these substances. It is difficult to determine how much of this improvement is subjective, and how much of it owing to the extractive matter, bitter, or aromatic substances which may accompany the ferments in question.

Clinicians not infrequently take advantage of another means of assisting the digestion in patients who lack gastric secretion; that is, they attempt to favor the digestion of proteids by the administration of pepsin and hydrochloric acid. The question is, how much advantage is obtained by this plan? The French observers have interested themselves in the administration of gastric juice removed from the stomach of dogs through a fistula, and administered to patients suffering from lowered gastric digestion. The results are apparently far superior to those obtained by the administration of pepsin and hydrochloric acid. Nevertheless it can be shown by the removal of the stomach contents in those who are victims of achylia gastrica that appreciable, though very slight, digestion of proteids goes on in the stomach after the administration of pepsin and hydrochloric acid in full doses. In some instances the same result is obtained by administering hydrochloric acid alone.

As a rule the secretion of the gastric ferments and hydrochloric acid goes hand in hand. This is not invariable. A disproportion between the total acidity and the digestive power of the stomach has been shown by several observers. This occasionally appears in neurotic conditions.

In inflammatory states, the so-called catarrhal conditions of the stomach, accompanied by lowered secretion, the amount of hydrochloric acid and pepsin apparently occurs in natural ratio.

The great difficulty in obtaining better digestion through the administration of pepsin in lowered secretion lies in the fact that we are unable to administer hydrochloric acid in sufficient amount to satisfy the demands of the ferments. In order to bring about good digestion relatively enormous quantities of hydrochloric acid must be given, and this the patient resents. We should realize that, while the administration of pepsin and hydrochloric acid under such conditions is a move in the right direction, the actual help to gastric digestion is really very small.

The question arises what influence for good may exist in pepsin *per se*. May it not exercise some beneficial effects on the organism regardless of its special action in the stomach? I am not aware that this question has been answered. We occasionally find patients who insist that they feel great improvement from taking pepsin, though we may satisfy ourselves that this does not depend on any marked improvement in gastric digestion.

As to the matter of the effect of preparations of pancreas on intestinal digestion, the situation becomes still more confused. I have not been able to satisfy myself that intestinal digestion is improved by the administration of any ferments whatever. If asked to prove this I should have to plead my inability. I have been unable to recognize the improvement either in the observation of the patient or the study of the stools. Cooperation between the secretions of the duodenum, of the pancreas and the liver, not to mention that of the stomach, is a matter of so much intricacy, as shown by the recent studies of Pawlow, Starling and others, that one feels reluctant to claim good results from the administration of diastase or pancreatic extract.

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* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

On the whole it must be concluded that the question of the administration of digestive ferments in medicine is complicated and is rendered the more uncertain by lack of precise knowledge as to what becomes of them in the digestive canal. In our present state of knowledge, or rather lack of knowledge, it behooves us to be modest in claiming either good effects or no effects from the administration of these ferments.

There can be no question that a large number of *preparations which have been placed on the market* are practically inert. Many combinations that are widely advertised, and presumably largely prescribed, are self-destructive, provided they are made as represented. That is to say, the various elixirs, etc., said to contain pepsin, pancreatin, hydrochloric acid, lactic acid, vegetable diastase, etc., are not only unphysiologic in theory, but by careful analysis made by the Council on Pharmacy and Chemistry of this Association, have been shown to be practically worthless so far as digestive activity is concerned.

This is not the least of many contributions to the enlightenment and assistance of the profession which have been made by the Association in recent years, and this seems to be a good occasion to express a recognition of the service.

436 Franklin Street.

ABSTRACT OF DISCUSSION

Dr. George Dock, New Orleans: My experience with the digestive ferments is rather unpleasant for those engaged in their sale. I think that Dr. Stockton was gentle in his reprobation. I have never prescribed digestive ferments. To be sure, some of my enthusiastic assistants have prescribed them, but never with any good results that I could see.

Dr. C. S. N. Hallberg, Chicago: It might be interesting to remark that in 15,000 prescriptions in the city of Philadelphia, representing about fifteen different pharmacists and one hospital, pepsin as such was prescribed 356 times, essence of pepsin 398 times, glycerite 15 times, the wine 20, the compound powder 18 and the aromatic 5. Pancreatin leads with 177 times. That means that the two main preparations of pepsin, that is, pepsin itself and the essence, were prescribed 750 times on 15,000 prescriptions. This shows that not all practitioners agree with Dr. Dock's theory.

Dr. Charles G. Stockton, Buffalo, N. Y.: I did not prepare this paper as a voluntary contribution, but at the request of the management, and I realize that it has practically nothing new in it. It is simply a belief perhaps too nihilistic, which I expressed as best I could.

Moscow Free from Cholera During Prevailing Epidemic.—P. Blumenthal contributes an article to the *Zeitschrift für Hygiene und Infektionskr.*, xliii, 199, 1909, calling attention to the brilliant results of the installation of a good water service in warding off cholera as evidenced in the experience at Moscow last year. During 1908 there were 9,000 persons attacked with cholera at St. Petersburg, while notwithstanding the constant communication with Moscow, there were only sixteen cases of cholera at Moscow during the year. Moscow used to have extensive epidemics of cholera, three in particular, in 1830, 1848 and 1853, having included respectively 8,798, 59,000 and 4,000 cases with the usual mortality of approximately 50 per cent. In 1893 a new system of water works was installed, providing the entire city with good spring water, supplemented in 1900 by an equal amount of river water passed through nine filters, after which the number of bacteria is much below 100 to the c.c., ranging from 5 in winter to 41 in June as the extremes.

THE REMOVAL OF TUMORS OF THE PITUITARY BODY BY AN INFRANASAL ROUTE

A PROPOSED OPERATION WITH A DESCRIPTION OF THE TECHNIC

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The various operations designed for the removal of tumors of the pituitary gland in which entrance is made through the nose have all passed through the upper part of the nasal cavity.

After an extensive study of the anatomy and repeated operations on the cadaver, I have worked out the details of an infranasal procedure and herewith submit the details of the technic.

In general, two routes are proposed, the intracranial and the extracranial or trans-sphenoidal. The former has been suggested by Caton and Paul, Krause, Kiliani and Caselli, and put into use by Horsley and McArthur. In the main, however, surgeons are inclined to view that approach with disfavor owing to the difficulties and dangers incident thereto, and Braun is the only one of the recent contributors who maintains that the route is practicable. Certainly, a study of the anatomy and the reports of the pathology, present in the cases, distinctly favor the trans-sphenoidal route, for, while a few of the tumors rise in the sella turcica, in a great majority of cases they erode the floor and grow downward. This latter fact must not be lost sight of in considering the proper course to pursue, since we are dealing not with the normal anatomy, but with a pathologic condition, which in this case fortunately lessens the difficulties of the operation. I have worked over the various methods of approach to the sphenoid proposed by various men.

One of the simplest of the proposed methods of reaching the sphenoid base is by an incision passing between the base of the tongue and the angle of the inferior maxilla, but its difficulty is that the point of entrance is too far away for easy work and it is chiefly unsatisfactory since it strikes the sphenoid at an angle, and in a majority of the skulls I examined would necessitate an extensive removal of bone and even then be unsatisfactory.

The splitting of the superior maxilla, as suggested by König and Hertle after the method of Gussenbauer, is a severe operation and does not give any better access than the simpler methods.

The remainder of the operations have consisted in some method of turning the nose to one side or down and thus reaching the sphenoid after removing the ethmoid cells and turbinates and at times making even more extensive resections. Among these may be mentioned the operations of von Michel, Giordano, Löwe, Moszkowicz, von Eiselsberg, Schloffer, etc. Löwe made a longitudinal incision a little to one side of the median *line of the nose, cutting through bone and soft parts.* The two sides of the nose are then turned back and the ethmoid cells and turbinates removed, the septum being either deflected to one side or resected. The sphenoid cells are then opened.

Moszkowicz and Tandler proposed to make an incision along the side of the nose and to turn it to one side. The *operation then proceeds along the lines just described.* They proposed to secure more room at times by the removal of the nasal process of the superior maxilla and the under wall of the frontal sinuses. The operation was performed in two stages; the first part carried the operation down into the sphenoid cells as described above; a flap of skin was then secured from the forehead and turned in along the cribriform plate, the tip reaching into the sphenoid cells. This was done with the idea of preventing meningitis. At the second operation the floor of the sella turcica was broken down and the tumor removed. It may be remarked in passing that, aside from the dangers of the operation, the floor of the sella turcica is generally destroyed at the time the patient comes to operation.

Schloffer in his case turned the nose to the right, excised the turbinates, the ethmoid cells, and the septum, removed the inner wall of the left orbit down to the optic foramen and the inner wall of the antrum of Highmore with a portion of the nasal projection of the left superior maxilla and then removed the tumor through the sphenoid cells.

Hochenegg turned down the nose, removed the ethmoid cells, septum and turbinates, made a bone flap of the anterior wall of the frontal sinuses and then passed through the sphenoid cells.

Von Eiselsberg operated each time by turning down the nose by what he refers to as the *Stimmegabelschnitt* (tuning-fork incision), removing the anterior wall of the frontal sinuses, the ethmoid cells, turbinates and septum. Borchardt operated after Schloffer's method.

It is thus seen that the essential feature of all these operations consists in reaching the sphenoid cells by the supranasal route.

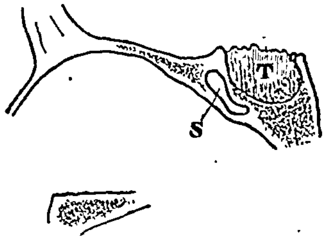

Fig. 1.—Finding on the *x*-ray plate of the tumor in a patient under observation.

Against this route is the great danger of meningitis arising through the cribriform plate, and the necessary removal of the ethmoid cells in addition to the turbinates with the attendant hemorrhage. Moreover, in von Eiselsberg's cases there was marked deformity following recovery. In favor of his operation was the fact that the distance from the surface to the sphenoid is slightly less, and, moreover, it seemed that one might have more definite landmarks to follow. This latter advantage I soon found was more apparent than real, since, owing to the downward curvature of the cribriform plate in two of my skulls, I was led to enter the sphenoid too low down. This will be seen by examining Figure 6.

In my search for a simpler method I was led to turn the nose up and thus follow a route to the sphenoid through the inferior part of the nares. I was surprised at the simplicity of the procedure, the good field it gave to operate through and the apparent security of the results. Moreover, it appealed to me because of the minimum of hemorrhage and the markedly lessened chances of infection.

The essential steps of the operation, therefore, are as follows:

The nose is turned up and entrance made into the inferior part of the nasal cavity; the septum is cut along its inferior part and its attachment to the perpendicular plate of the ethmoid. The middle turbinates are removed and the septum deflected to one side. We thus have a perfect view of the field of operation on the sphenoid. The sphenoidal foramina are located, and the interfering attachment of the perpendicular plate of the ethmoid and the vomer are bitten away. The anterior wall of the sphenoid cells is broken in, and by the aid of a Hajek-Schmithuisen punch forceps the sphenoid cells are opened up and the tumor removed as in any other procedure. It is essentially, then, an infranasal route.

By this method in nine cadavers I had no difficulty in opening the sphenoid cells and removing the floor of the sella turcica. In no case did I miss it and open any other part of the floor of the skull, an accident which did occur once during an operation by the von Eiselsberg method, when, following the roof of the nose as a guide, I was carried by its downward curvature under the sella turcica. Moreover, the technic was so simple as to take a minimum of time. The only real difficulty encountered was the variation in the sphenoidal sinuses, and this, of course, is attendant on any type of trans-sphenoidal operation.

A few of the practical points brought out by the cadaver work and study may be mentioned.

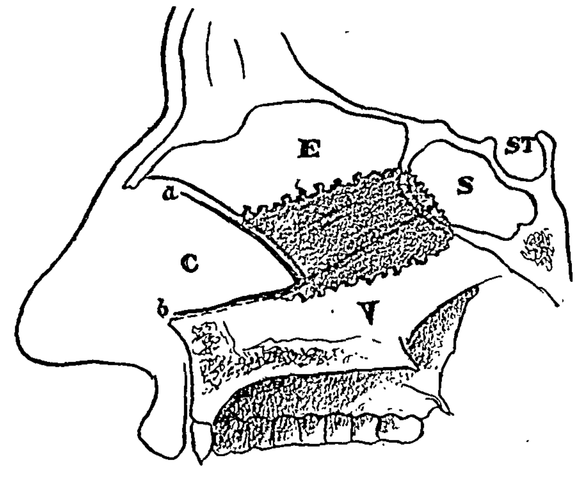

Fig. 2.—Line of incision (a-b) for the elevation of the cartilage (C). The perpendicular plate of the ethmoid (E) and the vomer (V) are shown as bitten away, as well as the anterior wall of the sphenoidal sinus (S).

In my cadaver work I made an incision around the lower half of the nose close to the crease at the alæ and close under the nares so as to have a minimum of scar. It may be necessary to excise the anterior end of the inferior turbinates. It is easily held in this position by the Jansen mastoid retractor. The deflected septum is held to one side with a Fraenkel nasal speculum, which holds the cavity wide open and yet does not interfere with the subsequent manipulations. Long, delicate yet strong instruments should be provided. The Hajek-Schmithuisen punch forceps is of great aid and it will be advantageous to have a narrow chisel with the end deflected at about 20° from the straight line. This is used in entering the sella turcica from the sphenoid. The attachment of the vomer to the sphenoid must be used as guide to the median line, since the septum between the sphenoidal cells is generally not in the median line and is asymmetrical in its relations. Many variations are noted in the sphenoidal cells. They may not be clearly separated from the ethmoid cells and it may be necessary to excise these latter. The cells vary greatly in size in different individuals. They may be no larger than peas, although this is uncommon, since they are generally of fair size. They may be extremely large. At times a horizontal septum divides them into four, and here it is difficult while operating to say whether you are

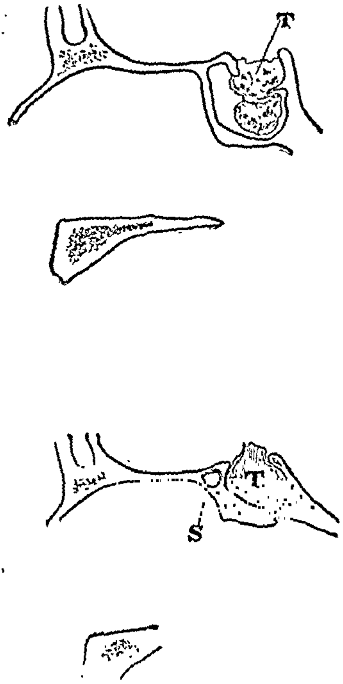

Fig. 3.—Tumors of the pituitary body, showing their relation to the sigmoid sinus. The upper drawing is from Zuckerkandl; the lower from Schloffer; the latter, and those in Figure 4, being from specimens in the museum at Prague

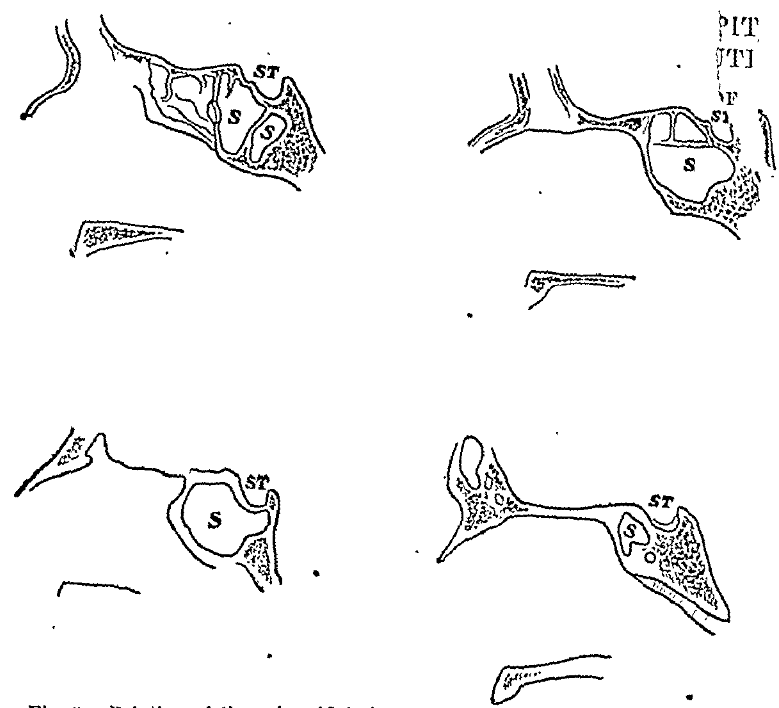

Fig. 5.—Relation of the sphenoidal sinus (S) to the sella turcica (S T) in various skulls.

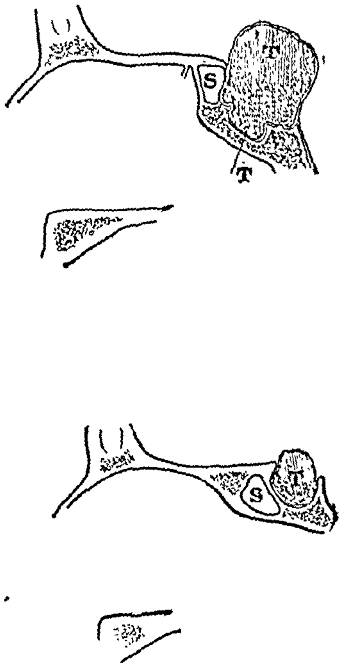

Fig. 4.—Tumors of the pituitary body, showing their relation to the sigmoid sinus; drawing from Schloffer.

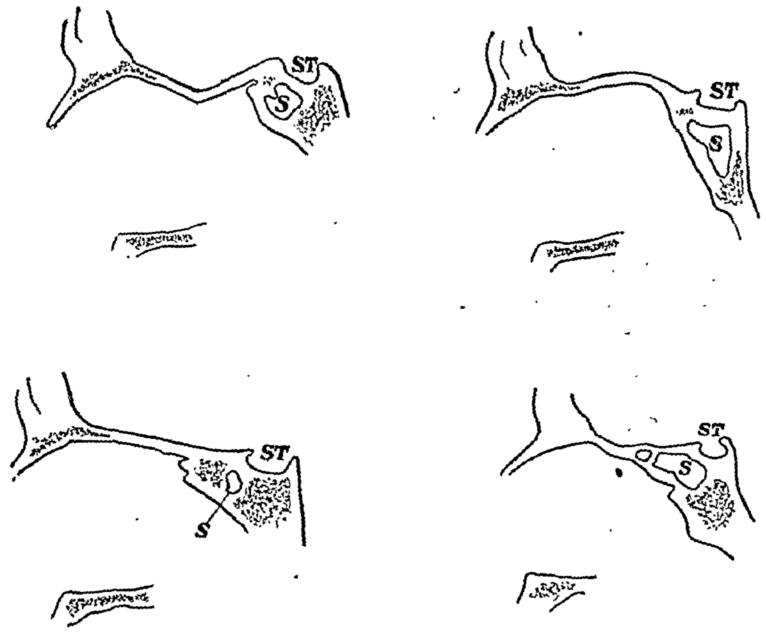

Fig. 6.—Relation of the sigmoid sinus (S) to the sella turcia (S T) in various skulls.

in the ethmoid or sphenoid cells. The sella turcica is also subject to great variation in size and position. These general facts may be seen from the drawings herewith shown, drawings made from my own cases and some redrawn from Zuckerkandl (Figs. 3-6). The changes in the relations due to tumors of the hypophysis are also shown in the drawings taken from various sources. Some idea of the relations may be secured from noting the position of the foramina. Zuckerkandl gives the accompanying table.

It will thus be seen that the roof of the sphenoid cells will lie approximately a centimeter above the foramina.

RELATIONS OF SPHENOIDAL CELLS TO FORAMINA

Height of Sphenoidal Sinus. mm.	Height of Foramen. From Bottom. mm.	From Top. mm.	Height of Sphenoidal Sinus. mm.	Height of Foramen. From Bottom. mm.	From Top. mm.
13	9	4	24	16	8
18	8	10	25	8	17
20	9	..	25	14	11
22	16	6	25	14	11
24	15	9	27	19	8

The distance from the bony entrance to the sella turcica should be measured on the x-ray plate. This information is of considerable aid while operating. It is normally about 8.5 cm. A good light is essential. The Kirstein or other head-light is satisfactory. The questions as to position of the head, packing the nasal cavity before the operation with adrenalin-soaked gauze, the type of anesthetic, etc., are not germane to my subject, except that one should consider favorably the rectal anesthesia as administered after the method of Professor Besley and Dr. Churchill. The anatomic work was done in the laboratory for experimental surgery of Northwestern University. I acknowledge the great help of Drs. F. Gurney Stubbs and H. M. Richter in developing the technic.

SUMMARY

The infranasal route is proposed in contradistinction to the supranasal route for reaching the tumors of the pituitary body. The technic in general consists in elevating the nose, cutting the cartilaginous septum, removing the middle turbinates, deflecting the septum, locating the sphenoidal foramina, biting off the intervening attachment of the perpendicular plate of the ethmoid and vomer, entering the sphenoid cells and thus reaching the floor of the sella turcica.

103 State Street.

CYSTOCELE

A RADICAL CURE BY SUTURING LATERAL SULCI OF VAGINA TO WHITE LINE OF PELVIC FASCIA *

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Ahlfelt states that the only problem in plastic gynecology left unsolved by the gynecologist of the past century is that of permanent cure of cystocele.

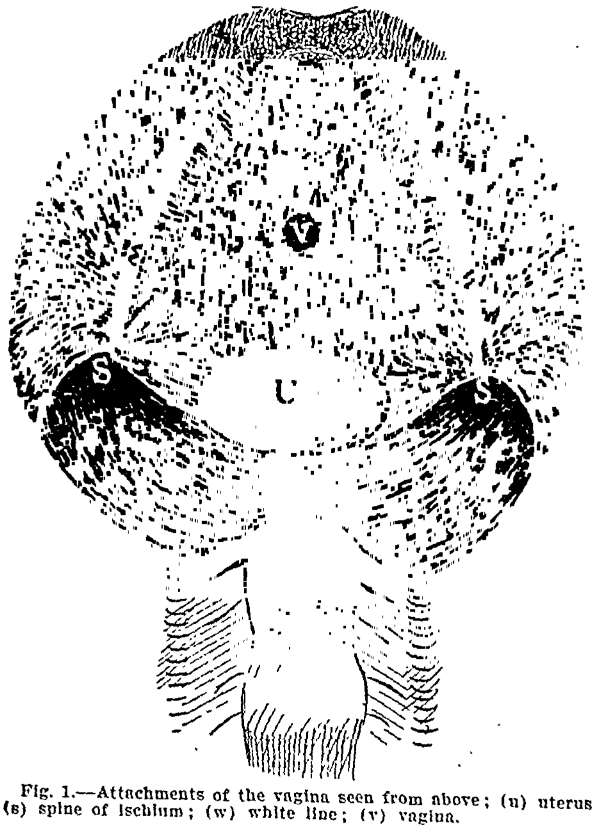

Fig. 1.—Attachments of the vagina seen from above; (u) uterus; (s) spine of ischium; (w) white line; (v) vagina.

That these cases recur after operation is too well known. The late Paul Numde states that all of his cases ended in failure and he had given up operating for that condition. The reason for failure seems to be that the normal support of the bladder has not been sought for and restored; but instead an irrational removal of part of the anterior vaginal wall has been resorted to, which could result only in disappointment and failure.

The support of the bladder may readily be determined in the cadaver by making a suprapubic incision and attempting to push the bladder out through the vulva. It will be found to rest on the anterior vaginal wall to which it is slightly adherent. If the bladder be pushed aside and an attempt made to push the anterior vagina wall back toward the perineum its support comes out very plainly. It is attached to the symphysis pubis and pubic bones in front, laterally to the white line of the pelvic fascia and ischiatic spine; and, above and behind, to the uterus. The uterus, being freely movable, is no important factor in the case and the real support of the vagina comes from its attachment to the white line of the pelvic fascia and especially a thick bundle of fibers attached to the spine of the ischium and radiating out on both the anterior and posterior surface of the vagina. If the fibers along the white line, and especially those originating from the spine, be cut across, the vagina falls down and can be pushed out of the vulva in the manner of a cystocele. It is, therefore, evident that a cystocele is caused by the breaking loose of the vagina from the white line which can readily occur during labor and especially in an instrumental delivery.

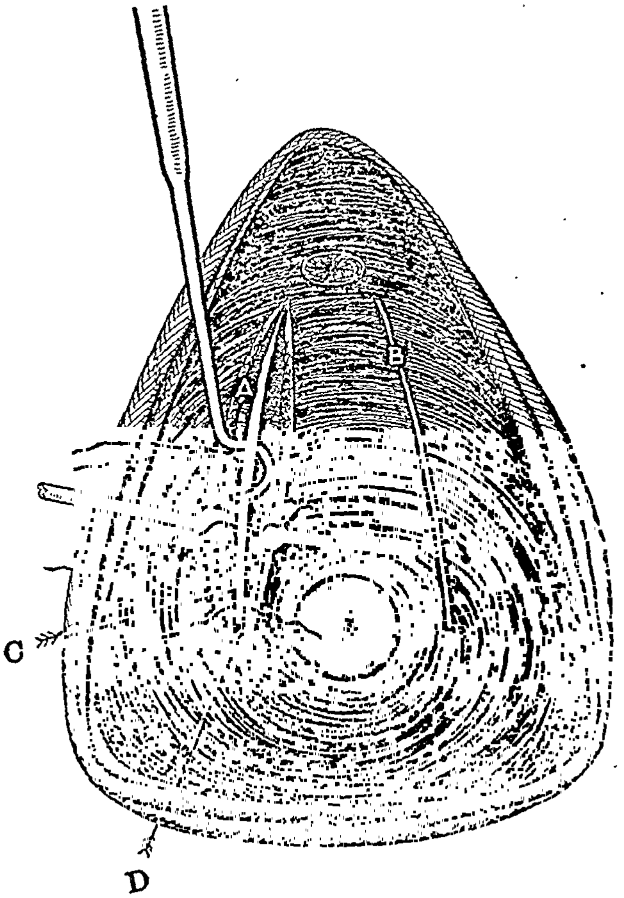

Fig. 2—Passing of sutures (a) back of the white line by Deschamp's handle-needle: two sutures in place; incision (b) from lateral sulcus of vagina to side of urethra; (c) white line; (d) spine of ischium.

I have recently had an opportunity to observe the actual occurrence of this lesion in a case of instrumental delivery for eclampsia, in which a laceration run-

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* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

ning along the lateral sulcus of the vagina laid bare the spine of the ischium, and separated the vagina from its attachments. Had the patient lived, she would undoubtedly have had a cystocele.

In another case of a young primipara delivered by forceps without any laceration, except a small tear along the lateral sulcus of the vagina, a complete cystocele developed within a month, although the perineum was intact and the uterus was in normal position.

In the treatment of cystocele the object is to reattach the vagina to the white line of the pelvic fascia, especially at its origin from the ischiatic spine, which can be done through the vagina without great difficulty.

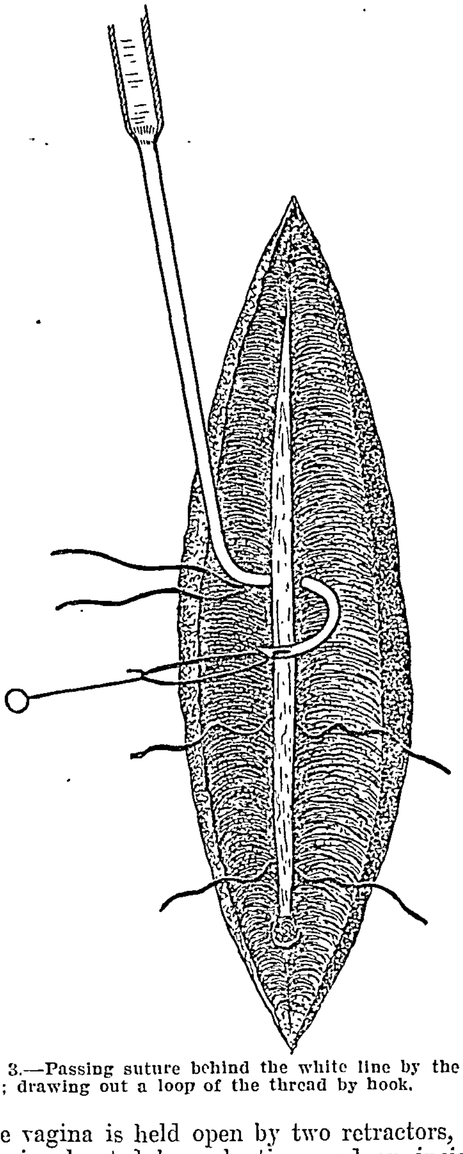

Fig. 3.—Passing suture behind the white line by the Deschamps needle; drawing out a loop of the thread by hook.

The vagina is held open by two retractors, the ischiatic spine located by palpation, and an incision from one to two inches long made through the mucous membrane, parallel to the white line, and extending well up the vagina. The bladder is separated from the vagina by blunt dissection until the spine of the ischium and white line are reached and can be felt uncovered beneath the finger. Hemorrhage is seldom troublesome and can be controlled by a few minutes' pressure. The sutures, which are of chromicized catgut, are passed under guidance of the finger by a Deschamps handle-needle.[1]

The first suture goes back of the white line just as it joins the spine of the ischium. The handle-needle is taken off, and each end of the suture threaded on a separate needle; one needle is passed from within out through the median edge of the incision, taking a firm hold on the vagina; the other needle is passed in a similar manner through the lateral edge of the incision. The two ends are then clamped and are ready to be tied. A similar suture is placed half an inch lower down on the white line, and when this is in place both sutures are tied, bringing the lateral sulcus of the vagina in contact with the white line of the pelvic fascia.

Should there be any prolapse at the outlet of the vagina, the incision may be extended down alongside of the urethra and the vagina sutured to the dense fascia covering the pelvic bone. The opposite side is treated in a similar manner and when both sides are tied the anterior vaginal wall is drawn up in a normal position, and has no tendency to sag, even when the patient coughs or strains. The vagina reaches across from one ischiatic spine to the other, without any tension; it collapses when the retractors are removed and normal relations of the parts are restored.

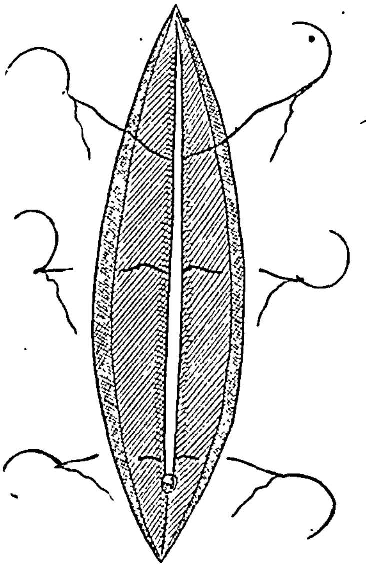

Fig. 4.—Suturing the lateral sulcus of the vagina to the white line.

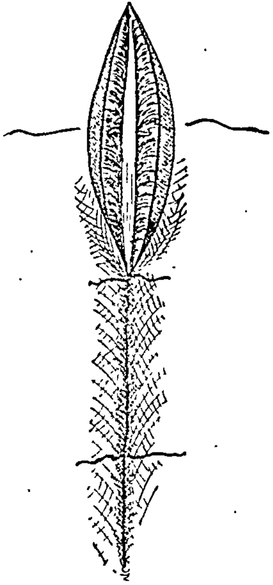

Fig. 5.—Closing the wound; two sutures tied.

The operation is always done in combination with other plastic operations, and does not interfere in any way with them, nor does it minimize the caliber of the vagina, which is a matter of importance should extensive denudations be contemplated for a rectocele.

The immediate effect is satisfactory. There is not much pain; dysuria, if present, passes off in a few days. The patients get up in from ten days to two weeks.

I have performed the operation nineteen times in the past three years, always in connection with some other plastic operation. No recurrence of the cystocele has taken place, so far as I have been able to determine, though some of the patients could not be followed.

The operation presents the following advantages:

1. The normal supports of the bladder and vagina are restored.
2. There is no sacrifice of tissue.
3. Recurrences are rare and are due to faulty technic rather than faulty principles.
4. The operation is done without interfering with any other plastic work about the vagina.

4 Liberty Street, West.

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[1] I make use of a Deschamps needle, described by Charles Peck in his article on cleft palate, Annals of Surgery, January, 1906, xliii, 10.

ABSTRACT OF DISCUSSION

Dr. H. Grad, New York City: At the Woman's Hospital in New York we have passed through a series of stages in plastic surgery. It was in this place that Sims began his plastic surgery, followed by Emmet, Thomas, Peasley and others. We formerly operated there on a plan devised by Emmet of denuding the anterior wall of the vagina in cystocele with the addition of a suture Emmet devised. A denudation is made on either side of the cervix and also in the median line on the anterior wall of the vagina, and when these three denudations are brought together the cervix is pushed into the hollow of the sacrum. That was the first principle of a successful operation on the anterior wall as practiced in the Woman's Hospital. This operation was done for a great many years, but we had a great many recurrences. Within the past few years another method has been followed there, and that is the method of Dr. J. Riddle Goffe. In this operation a longitudinal incision is made from the urethra to the cervix on the anterior wall of the vagina and a transverse incision along the cervix. These two incisions open up the entire anterior wall of the vagina, the bladder is dissected off, which is a very important point, because the bladder wall becomes adherent to the anterior wall of the vagina in a way that is vicious. Dr. White did not mention cystocele where no traumatism has occurred. In the unmarried woman there is no traumatism, but a gradual loss of the support, and the result is cystocele. By dissecting off the bladder as practiced by Dr. Goffe, we find that we get absolutely perfect results. He sutures the base of the bladder to the anterior wall of the uterus with three fine catgut sutures to hold the bladder out of place. The pelvic fascia is brought together in the same manner as one does in operating for a hernia.

It seems to me that the operation described by Dr. White is a very good one because it is based on good principles, but I believe that unless the bladder is at the same time separated from the anterior wall of the vagina there will be some recurrences.

Dr. C. W. Barrett, Chicago: The principles on which cystocele is treated must be based on the fact that cystocele or rectocele, or prolapse of the uterus is a hernia through the pelvic floor, and we must take into consideration the supports of the pelvic organs and the abdominal organs as well. The viscera, including the pelvic organs, are supported by ligaments and then by a limiting wall, and that limiting wall grows in importance as it goes downward. The pelvic floor is in the unfortunate position of having to play fast and loose, of having to be a most important part of the abdominal wall, because it is the lowest, and it must allow the passage of the child's head which distends the soft parts of the pelvic floor to the extreme limits of the bony parts; and these muscles must again contract so as to serve as the most important part of the abdominal wall. When important structures run through the abdominal wall, as we see in the inguinal region, instead of running straight through, they run through one part, then along the wall obliquely and then through the remaining portion of the wall. In the lower animals, the canal being more oblique, we have less tendency to hernia. As the intra-abdominal pressure increases, the pressure of the internal layer is against the external layer. In animals that walk on all-fours, very little of the pressure comes on the perineal region. In the higher class of animals and in man the muscles which have no use as tail muscles form in the median line the levator ani muscle. Occasionally in an individual we see, without trauma of the pelvic floor, that the muscle presents almost no fibers meeting in the median line, so that no support is derived therefrom and a tendency to hernia is created by reason of atavism of the muscle. We find that the patient needs a perineorrhaphy just as badly as the patient who has had a traumatism of the pelvic floor. To cure cystocele and rectocele we must do several things: 1. Create a good strong pelvic floor, that does not depend on any skin operation nor on a mucous membrane operation. It is herniotomy; going in and getting hold of the levator muscle which has been formed in the upright animals, but which has been displaced by traumatism or which has never met in the median line. 2. We must put the vagina out of a perpendicular line so that the anterior segment rests on the posterior. 3. If the vagina is so loose that no matter how good a pelvic floor we make, it would gradually work out over the perineum, we must do something with the vaginal canal; and it may be that this method is a good one. I have had no reason to discard the method of taking out an eliptical piece in the anterior wall: not a scarification, but a deep dissection of the anterior wall and bringing it together. 4. We must not only do these two things, but we must put the uterus out of line with the vagina. If we leave the uterus in line with the vagina it will dissect its way down through the vagina again.

Dr. I. S. Stone, Washington, D. C.: I agree with Dr. Barrett that there are two very strong "floors," or a division of one floor into two. It is very easy to understand this if we make a dissection from below or above, that the upper plane of this floor, as well as the lower, has strong bundles of fascia which may be demonstrated. If any one will make this dissection they will never fail to utilize it in an operation for cystocele. I can not understand how anyone, after these several years of advanced pelvic work, can continue to use a method denudation. Suppose we have only this upper "floor," as Dr. Barrett has said. If the uterus be left in such a position with the small end forward it will eventually prolapse. But if the uterus be so placed that the fundus is forward and the cervix backward, and in addition to the cystocele operation a proper perineal operation be performed, the patient is cured.

Dr. A. Goldspohn, Chicago: About seven years ago I published an article, with illustrations of the technic, entitled, "Intrapelvic and Infravaginal Perineorrhaphy, Without Loss of Tissue." I am glad that correct anatomic principles are finally gaining ground, with the profession, in regard to this operation; because until recently, this operation was in most hands a very superficial and incomplete performance, merely a cosmetic affair, which really improved the condition of the woman very little. As I pointed out in my first article on the subject, a German first called attention to the correct anatomy of the levator ani muscle, and its important function in this regard. I have wondered for years why it was that his countrymen did not incorporate his correct anatomic principles in their surgical attempts at perineorrhaphy I was recently informed by one of them, that it was because they did not have buried suture material. But we have had absorbable sutures for a number of years and have been rather slow in this country in grasping the proper scope, of this operation, and in bringing an efficient technic into general use. Recently Dr. Barrett has become active in this matter, and he practically advocates the same principles, that I have contended for all these years. The play of normal forces in a woman's pelvis, is such, that when she strains, that is when intra-abdominal pressure is exercised, the pressure strikes the vaginal tube, sideways from above, the body of the uterus being during the same time, driven forward, in intensified anteversion. The anterior vaginal wall is driven against the posterior vaginal wall, which in turn is or should be driven against the pelvic diaphragm, the levator ani below. In that manner the vaginal tube is closed against the descent of anything through its lumen by evagination. The bridge of the levator ani muscle which normally passes from one side to the other, back of the vagina and in front of the rectum, is best restored when it has been injured, by temporarily raising the posterior vaginal wall, and then uniting the important structures by purely transverse buried sutures, and then adjusting the detached vaginal wall in folds on the new bridge.

Uterine prolapse in this country being almost altogether in women past childbearing years, or in those who are willing to surrender that function, can be treated very successfully as a rule, by combining a vaginofixation or a ventrofixation of the uterine body or fundus, (by a fibrofibrous union), with a thorough restoration of the anatomy of the levator ani muscle as a pelvic floor or diaphragm. Moderate cystoceles require no other treatment than the building up of such a normal support for them from below. When they are very marked or large, however, it is usually necessary to attack the anterior vaginal wall, also to give the bladder a new location higher up or on the fundus uteri, where it can not again invite the disorder, and to abbreviate the expanded anterior vaginal wall. The latter is better done *not* by resection, but partly at least, by sliding a flap of one side under that of the other side, after appropriate detachment, and denudation, thus doubling this wall, over the median area, where it was formerly most attenuated.

Dr. G. R. White, Savannah, Ga.: I have been surprised many times in working out this subject to follow the logic of many of the operations recommended for the cure of cystocele. *Everything* as recommended except repair of the anatomic supports of the bladder. The problem of keeping the bladder in place is solved in repairing the shelf on which it rests. Otherwise I do not see how we can expect to cure cystocele. The point of great importance is that the pelvic organs are a unit. It will not do to repair one part and let the others go and expect to get a cure. There is no use in repairing a cystocele and leaving a relaxed perineum and prolapsed uterus.

THE MACROSCOPIC AND MICROSCOPIC APPEARANCES OF STOMACH CONTENTS

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The subject of the macroscopic and microscopic appearances of stomach contents, especially the former, is one that has been neglected by gastrologists. The moment the examiner secures the contents he pours them immediately into the filter on the funnel for the chemical examination. I have to meet yet the man who carefully examines the stomach contents in gross and then makes notes of the macroscopic findings. Even the best text-books on the diseases of the stomach are almost silent on the subject. I myself can judge much better about the anatomic condition of the stomach from looking at the stomach contents than from the results of the chemical examination. I will illustrate by an example.

Here is a specimen of stomach contents that shows on chemical examination the following: Free hydrochloric acid, 30; total acidity, 60; lactic acid, 0; starch digestion, erythrodextrin; pepsin and rennet ferments normal; biuret positive. What would be the inference? Cannot tell, as everything seems normal. One glance, however, at the stomach contents will establish the diagnosis of the case. The contents present the following characteristics: It spouted out with great force, like a fountain of the stomach-tube. There is a large quantity of it. It is very watery. Very little bread in it. Small round granules (starch) are falling to the bottom. Anything like this makes the case clear at once. It is a case of hyperacidity.

Here is another example: Stomach contents on examination show free acidity of 37; total acidity, 73; lactic acid, 0; starch, amylodextrin; pepsin and rennin, normal; biuret, positive. What is the inference? Nothing distinctive. The case, however, is clearly one of chronic gastritis of the acid variety. And on gross examination the contents show it at once. There is a lot of mucus in the contents embedded within the food. Contents are rather profuse and fairly fluid, and I would, therefore, surmise this to be a case of acid gastritis.

The negative part of the examination is just as important as the positive. A patient presents himself and tells of his illness, which has come on him rather suddenly. He has previously been in perfect health. For past few weeks he has had a variety of dyspeptic symptoms, with some loss of flesh and strength, loss of appetite, etc. The diagnosis of cancer of the stomach naturally flashes through the physician's mind, and he gives the patient a test breakfast. The chemical examination of the contents gives a normal result. Would any one, in the face of that history, assert that there is no cancer? I hardly think so. If, however, the stomach contents are examined macroscopically and found to consist of a clear, thin, milky emulsion, this being supplemented by a negative microscopic examination (and I will point out later what is understood by a negative microscopic picture), I would not hesitate a moment in pronouncing this case to be free from cancer of the stomach. I shall proceed now to point out the characteristic features of the macroscopic and microscopic pictures of stomach contents in normal state and in disease.

NORMAL STOMACH CONTENTS

In order to establish fixed clinical pictures we must have a standard. The stomach contents must be extracted always after a certain time and after a fixed uniform meal. It will never do to compare the appearances at one time of a carbohydrate meal and next time of a meat meal, as the two meals will vary considerably in their appearance. Nor does the same meal look alike at different periods of digestion. Fortunately the Ewald test breakfast is marvelously well adapted to the purpose. Although I am in a habit of giving each stomach patient two meat meals as well as two Ewald test breakfasts, and I have, therefore, had the opportunity of examining as many meat meals as I have examined test breakfasts, I have not learned to judge of stomach contents consisting of a meat meal with the same certainty as of an Ewald test breakfast.

A normal test breakfast, when extracted three-quarters to one hour after it is eaten gives a uniform white milky emulsion. The particles of bread are very tiny and they are all of almost uniform size. The contents are neither too thick nor too fluid. One or two ounces are secured without difficulty either by expression method or by employing an aspirator. There is hardly any odor to it. On standing it will separate into two layers which will be almost even in volume, the bread being at the bottom and a rather turbid liquid at the top. There is no mucus to be seen in it in gross. Its color is white, but may shade off into a very faint yellowish tinge. Having made these observations I proceed next to pour the contents into the filter. I notice that the contents pour uniformly. There is no large aggregate of masses bound together. There is not much of adherence between the individual particles of bread; a very slight, almost inappreciable quantity of mucus. The contents filter with a fair rate of rapidity and in five to ten minutes we get 5 to 10 c.c. of contents filtered through.

Microscopic Examination.—A drop of the unfiltered stomach contents is put on a large glass slide and spread out evenly to a very thin layer with a glass rod. The unstained specimen is very unsatisfactory for microscopic examinations and the keenest observer will confound small starch granules, fat globules, yeast cells, cell nuclei and blood cells if they should happen to be there. (Blood cells are extremely uncommon in stomach contents, as they are digested by the gastric juice and lose their identity.) I have, therefore, discarded the unstained smears entirely.

The most satisfactory way of examining it is to use a solution of iodin and potassium iodid in the following proportions: potassium iodid, 0.1; resublimed iodin, 0.05; distilled water, 100. Gram's iodin may be used, but it is too concentrated and stains the mucus a bluish tinge. The iodin solution stains all the starch, which constitutes the bulk of the drop, blue or violet, according to the degree of the digestion of the starch, while all cellular elements, muscle fibers, yeast, sarcinæ, are tinged lemon-yellow color. Bacteria are not stained by it at all. This stain gives a beautiful and very satisfactory picture. The iodin evaporates quickly, however, and on working for fifteen or twenty minutes over the slide the colors fade, which can be remedied, however, by adding another drop of the solution: the colors are then restored. The solution must be kept in a glass-stoppered bottle, as the iodin will evaporate through both cork and rubber: will turn from the normal wine color of the solution to a straw color which then has no staining properties at all.

Normal stomach contents, when stained after the above method, will show large numbers of granules of varying size. They will all be dark blue or violet, which will alter with the degree of starch digestion, the latter circumstance, however, depending solely on the degree of the acidity of the stomach. The salivary ferment, the ptyalin, is always reliable and capable of carrying on the digestion of the starches with utmost satisfaction. It works, however, only in an alkaline, neutral and even faintly acid medium. According to Chittenden and Smith, it acts best when there is just acid enough to saturate the proteins present. This acid is called combined acid, as it enters into a chemical combination with the food. When there is acid present in excess of the affinities of the proteins present, i. e., above the degree of saturation, the acid remains free and is called free acid. It is this free acid that hinders the action of the salivary enzyme. It is obvious that in hyperacidity the rate of the secretion, the quantity of the acid containing gastric juice and the concentration of the acid cause the free acid to appear early in the digestion, and this checks the activity of the ptyalin. This is what gives the difference in coloration of starch with the iodin. The less the effect of the amylolytic enzyme the deeper does the iodin stain the starch and *vice versa.*

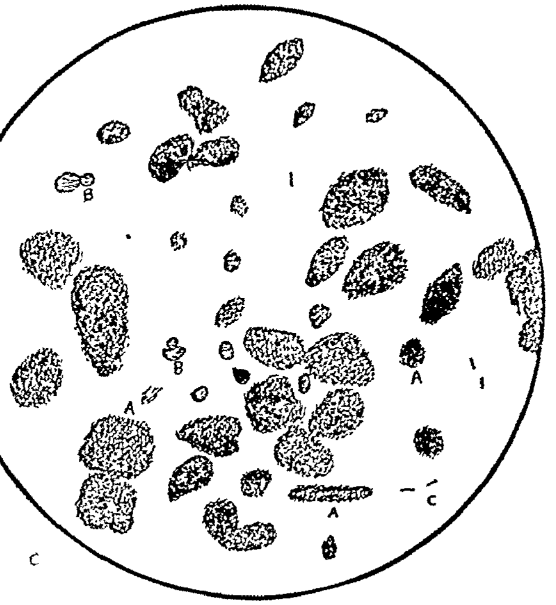

Fig. 1.—N. F.: Normal stomach contents. Test meal, stained with iodin solution; A, starch; B, yeast cells; C, micro-organisms. Leitz No. 7 objective; Ocular No. 2.

Besides the starch granules, a few yeast cells will be encountered. Yeast cells resemble very closely red blood cells, and the inexperienced eye will take them for such. They are almost of the same size. All red cells are of the same size, however; while yeast cells vary considerably, some being smaller and others being larger than a red cell. The main differential point is that yeast cells are oval, only rarely round. They are mostly situated in pairs. They are stained of a deeper lemon color by the iodin solution than red cells. In general red cells are a great rarity in stomach contents, while yeast cells are most frequent inhabitants of the gastric contents; occasionally an epithelial cell, just a few micro-organisms, cocci and bacteria (No. 7 Leitz). A bit of mucus may be met here and there.

The Stomach in an Empty State.—In fasting condition the stomach is contracted with the two walls lying in apposition to each other and no secretion is present. This is the view held by most writers, although some authors oppose it. We often, however, meet cases in which the introduction of the stomach-tube into the jejune stomach brings forth a few drams of fluid. This may have been left from the former meal. It may consist of swallowed saliva, or it may consist of duodenal secretion regurgitated through the pylorus. Some bile-stained fluid is of very common occurrence in the jejune stomach and this would imply regurgitated duodenal contents. The pylorus does not seem to be tightly closed when the stomach is empty. Boas[1] is of the opinion that the constant presence of bile in the stomach points to a stenosis of the descending portion of the duodenum. I have never found any acid present in these small quantities of secretions obtained from the fasting stomach, except in cases of Reichmann's gastrosuccorrhea. I have never tested them, however, for the presence or absence of enzymes.

By washing a fasting stomach we get off a good many exfoliated epithelia, bacteria and mucus, and from these a good deal of useful information may be secured on microscopic examination. I have examined the centrifuged sediments of the washings and will point out the results. In a normal stomach the washings are almost negative. Here and there an occasional cell is seen and some mucus and mucous corpuscles.

This completes the picture for normal, physiologic stomach contents. Anything beyond it either quantitatively or qualitatively is pathologic.

PATHOLOGIC STOMACH CONTENTS

Hypersecretion, Hyperacidity, Hyperchlorhydria.—The change in the character of the secretion is evident from the moment the tube passes through the cardia. The stomach contents rush through with a sudden gush and several ounces are obtained in a moment. On inspection the contents are seen to be profuse, very watery, with very little solid matter, possibly no food at all or heavy round little granules, like granules of sand, falling to the bottom. There is a marked acid odor. On standing, a very thin layer of solid granules appears at the bottom, with a large quantity of liquid over it. At times a small layer of thin bread particles float to the top, thus forming three layers: solids at bottom, liquid in the center and a thin layer of very light bread particles permeated by gases floating to the top. I will discuss later the significance of this. The contents filter very readily, almost like water through the filter-paper.

It is this profuse, watery condition, with or without the small, sand-like, starchy granules falling to the bottom, that makes the diagnosis of hyperacidity, no matter how low the figures for free, combined and total acidity should be. The explanation is obvious. Although the gastric juice be not concentrated and it contain not much hydrochloric acid in each individual cubic centimeter of stomach contents, the quantity of gastric juice being large, the total quantity of hydrochloric acid is necessarily high.

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[1] Boas: Deutsch. med. Wchnschr., 1891, No. 28.

I employ this method of inspection exclusively in diagnosis of hyperacidity and never try to extract all the stomach contents. I consider this latter method both cruel and inaccurate. The test meal, as a rule, is being given to patients who are not accustomed to the use of the tube, and we ought to be perfectly satisfied if we get enough contents to yield after filtration about 10 or 15 c.c. for examination. It is a great torture to such a patient to try to empty the stomach completely, and, more than that, it is an impossibility to empty such a stomach. It is a very difficult task to perform even in a perfectly tolerant stomach. I will advise any skeptic who may doubt these latter words of mine, after he washes out the patient's stomach and he is convinced that the stomach is perfectly empty, to put the patient on a couch, have the patient relax himself and to splash the patient's stomach vigorously; he will elicit a very marked splashing. He will appreciate then how hard a task it is to empty a stomach completely.

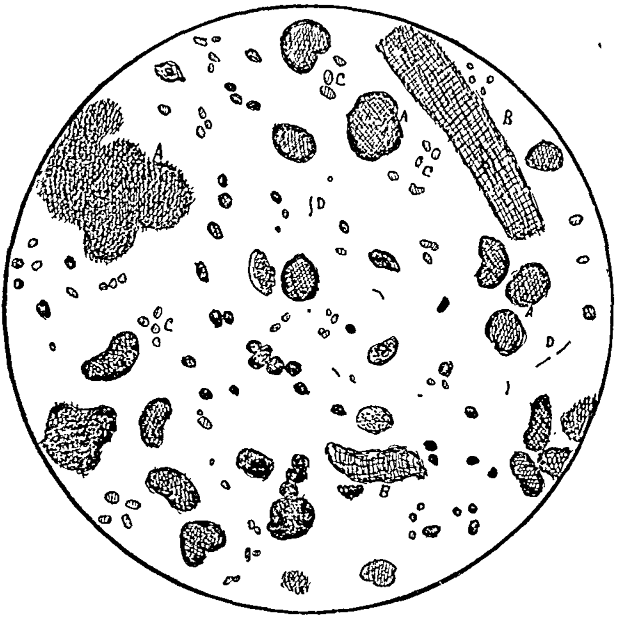

Fig. 2.—M. A.: Hyperacidity. Meat meal, stained with iodin solution; A, starch; B, muscle fibers; C, yeast cells; D, micro-organisms. Leitz No. 7 objective; Ocular No. 2.

Microscopic Appearance: The starch granules are of large size. They stain deep blue or black with the iodin solution. Yeast cells are present in abundance, much more than in normal stomach contents. A good many bacteria float around. This latter fact would be contrary to the general teaching of physiologists, that one of the functions of the hydrochloric acid in the stomach is as a bactericide. My studies in the microscopy of the stomach contents have shaken my faith considerably in this doctrine. It is my belief that the real bactericidal power of the stomach lies in its motility. When the motility of the stomach is normal, the micro-organisms are not so abundant, it matters not whether the acidity is below or above par; while on the other hand, even in the most marked cases of hyperacidity, such as we often meet in benign obstructions of the pylorus, the bacterial flora flourishes to stupendous proportions.

In case of a meat meal the muscle fibers are seen in hyperacidity to be very well digested, the striæ of the muscle fibers being almost obliterated.

The microscopic appearance of stomach washings from the empty stomach presents the same features as does that of a normal stomach: a few epithelial cells here and there; also some mucus and mucous corpuscles.

Gastric Fermentation.—I do not mean to classify this as a distinct disease. It is merely a single pathologic feature which occurs in a variety of gastric diseases, and it is appropriate to point out how this can be recognized by the stomach contents.

The stomach contents, in case of fermentation, when put in a beaker or bottle, separate into three layers: a layer of food at the bottom, a layer of turbid liquid in the center and a third layer on top. This layer consists of thin fermented particles of food permeated by gases which float them to the top, mixed with some mucus and also fat. We must differentiate this topmost layer of food from a mere layer of fat which has been ingested and which floats to the top. There is often a very offensive odor to the contents. The most frequent occurrence of stomach contents of such a character is in cases of motor insufficiency due to obstruction, mostly benign, and at times malignant, and also cases of atony of the stomach. It is often encountered in cases of hyperacidity, this probably being due to some fermentation within the stomach, owing to its retarded digestion of starches occasioned by the hyperacidity, since the ferment of the saliva—the ptyalin—works only in a neutral, faintly alkaline or faintly acid medium.

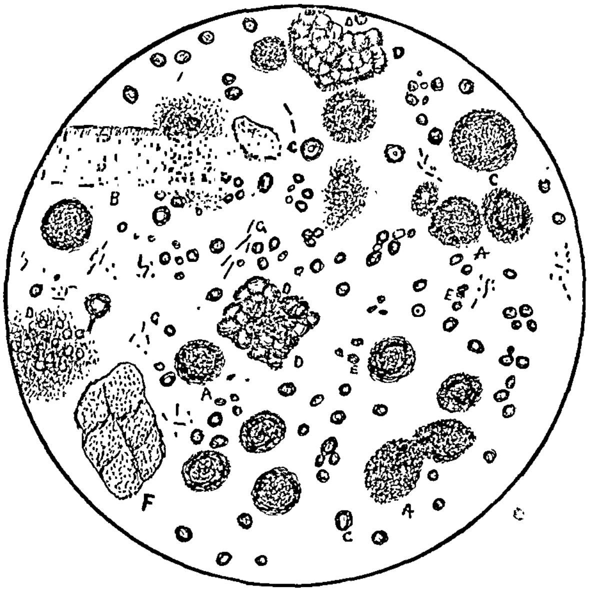

Fig. 3.—M. P.: Benign obstruction of the pylorus. Test breakfast. stained with iodin solution; A, starch; B, muscle fibers; C, fat; D, sarcinæ ventriculi; E, yeast cells; F, vegetable cells; G, micro-organisms. Leitz No. 7 objective; Ocular No. 4.

Gastric Ulcer.—The stomach contents may contain fresh blood, a phenomenon, however, which is seldom met. More often the contents have the appearance denoted by the classical name "coffee-grounds." "Coffee-grounds" are a cleavage product of the blood brought about by the gastric digestion. The coloring matter of the blood—the hemoglobin—through the enzymatic action of the gastric or pancreatic secretions, is converted into a protein body named globin and a ferruginous coloring matter, hemochromogen, which latter, in the presence of oxygen, becomes quickly oxidized into hematin. It is this hematin that imparts that characteristic color of coffee-grounds. Microscopically the red and white corpuscles can be made out but with great difficulty, since they become digested by the gastric juice, which is, as a rule, very active in cases of gastric ulcer, as these cases are accompanied by hyperacidity.

In interpreting the meaning of coffee-grounds one must be very careful, as the patient instead of the regular test meal may take coffee, and, what is worse, may try with all his might to deceive the doctor. The microscopic examination of coffee-grounds being of no value on account of the loss of the identity of the red and white corpuscles which can be made out but with great difficulty in such cases we have to resort to a chemical test, such as the hemin test, etc. A very satisfactory and simple test, indeed, and the one which I employ is this: To equal parts of chloroform and turpentine are added one or two drops of fresh tincture of guaiac. This is shaken; some of the solution to be tested is added and the mixture shaken. In the presence of blood the mixture turns blue. I wish to caution the reader not to rely too much on the presence or absence of blood, whether in gross or microscopically, in the diagnosis of ulcer of the stomach, as blood is not often met in the stomach contents in such cases. In cases of carcinoma of the stomach this is a much more common phenomenon. In ulcer, black stools should be rather looked for than blood in the stomach contents.

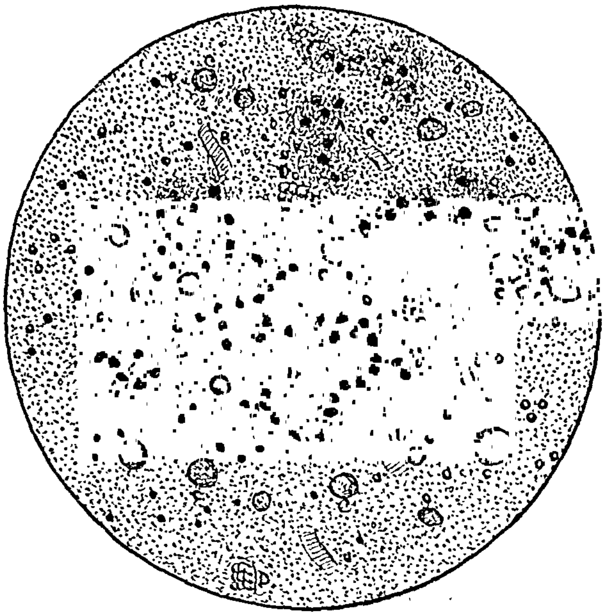

Fig. 4.—M. P.: Benign obstruction of the pylorus. Test meal; A, starch; B, muscle fibers; C, fat; D, sarcinæ ventriculi. Leitz No. 3 objective; Ocular No. 4.

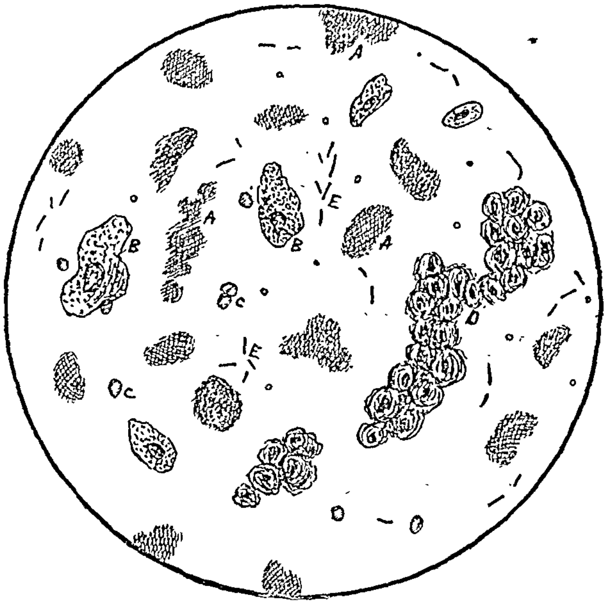

Fig. 5.—G. C.: Chronic gastritis. Test breakfast; A, starch; B, epithelial cells; C, yeast cells; D, mucous corpuscles forming mucus; E, micro-organisms. Leitz No. 7 objective; Ocular No. 2.

Motor Insufficiency.—The stomach contents usually have a gray, dirty look. A lot of fat globules float on the surface. Elements of food not included in the test meals are often recognized; especially skins of fruits are left behind and are easily recognized. The mixture emits a strong, rancid, butyric acid odor. It separates readily into three layers, solids at bottom and top with liquid in the center.

Microscopically we find starch granules stained blue by the iodin solution; muscle fibers (if the patient eats meat); fat globules in large numbers. The fat globules vary a good deal in size and appearance. There are large numbers of them as small as a red cell or a yeast cell and even smaller and some very large ones. The small ones, indeed, resemble red cells or yeast cells very much, and the only way to recognize them is, first, that the fat globules do not stain with the iodin solution, while the red and yeast cells do stain a light yellow color, and, second, that we find a large number of other globules of the same character, but of larger and manifold shapes. Fat is better identified with a low-power lens such as a 3 or 4 Leitz than with a higher power. The fat globules are of various shapes from round to oval, elongated and even gyrate figures. There is another form of fat globules which are met especially in obstruction cases and which look not unlike raspberries. They stain a very pale yellowish color with the iodin stain. These are undoubtedly fat globules that have undergone certain lypolytic changes, the exact nature of which, however, I have never succeeded in learning.

Another element encountered in motor insufficiency consists of the sarcinæ ventriculi. They look like bales of hay and are found in two forms, a larger and a smaller one. They are mostly met in motor insufficiency of benign origin. They are never seen in cancer. Oppler has injected pure cultures of them in carcinoma, and in twenty-four hours they all disappeared. Richter[2] reported a case of obstruction of the pylorus caused by a tumor formed by large aggregations of sarcinæ ventriculi. I have found it extremely useful in differentiating between an obstruction of benign and an obstruction of malignant origin. These cases are very trying, indeed, as they have most of the factors in common. There is the palpable tumor of the pylorus, there are the peristaltic movements of the stomach, there is the stagnation of food, there is the vomiting, there is the same loss of flesh and strength. The acidity is very often of little help, as in pyloric carcinoma the acidity is very often high. How are we to differentiate between the two conditions? A very good way is the microscopic examination. Presence of sarcinæ with absence of Boas-Oppler bacilli means benign condition. Presence of Boas-Oppler bacilli and absence of sarcinæ mean a malignant condition. In looking over my clinical material for the past few years I find only one case.

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[2] Richter: Virchow's Arch. f. path. Anat., 1887, cvii, 198.

Case 1.—A. M., female, aged 35, presented a typical history and appearance of carcinoma, and yet large numbers of sarcinæ were found in the stomach. There was a good-sized palpable tumor in the stomach. The examination of her stomach contents showed the following: Free hydrochloric acid varying between 4 and 20; total acidity, 48 to 92; no lactic acid; starch digestion—erythrodextrin. Gross examination: Contents looked gray and were of foul odor. Unfortunately the case passed out of my observation and I could not learn the ultimate fate of the patient. That case certainly looked malignant, but was it not rather a case of sarcoma than carcinoma?

Another case is the following:

Case 2.—F. T., female, over 50, presented marked peristaltic movements and a lot of sarcinæ were found in her stomach contents. Here free hydrochloric acid was 40 to 50; total acidity, 70 to 76; lactic acid, 0. The patient was operated on at the Roosevelt Hospital. The pathologist's report inclined more towards a benign condition.

In general in motor insufficiency the microscopic examination is very often of great utility, as will be shown by the following case:

Case 3.—I was requested by a colleague to extract and examine a test meal. The patient was an elderly man and it was the hardest thing to persuade him to have a stomach-tube passed. The patient was given an Ewald test breakfast in the morning on an empty stomach. It required a good deal of suasion and humoring to have the patient submit to the ordeal, although the stomach contents were withdrawn without any difficulty. The chemical examination showed somewhat higher figures than normal. On microscopic examination I found a large number of muscle fibers and large numbers of sarcinæ ventriculi with numerous micro-organisms. The patient ate meat on the previous day; it was evident that the case was one of motor insufficiency and the sarcinæ pointed to a benign obstruction. Here we have accomplished through the microscopic examination a great deal, especially since the patient would never submit to any more tubing of his stomach to carry out the stagnation test.

The large number of various micro-organisms, irrespective of the acidity, is another factor found in cases of motor insufficiency. Yeast cells are in abundance.

I cannot refrain here from expressing my opinion about remarks that I often hear made at medical meetings by stomach specialists about the great value of finding microscopically residual food as an early diagnostic means of pyloric obstruction. The conception is both erroneous and fallacious. If there is any obstruction at the outlet of the stomach, it is not the microscopic particles that will meet the obstruction first, but the big chunks of food will be left behind. The analogy with esophageal obstruction is striking. In the early stages of obstruction of the esophagus it is not the liquid foods, but the solid foods that cannot go through. Soup, milk, etc., go through very easily, and these liquids certainly contain microscopic particles of food. Milk contains fat globules. It is only in the last stages, when the esophageal stricture becomes impermeable, that the liquids cannot get through. The same holds true of obstruction of the pylorus. I admit that in some early cases of pyloric obstruction in the morning on a fasting stomach one may find microscopically particles of food left from the supper from the previous evening, which will point to an interference with the motility, but in such a case we have a much more reliable criterion, namely, examination of the patient after a full-sized meal seven hours later, when any normal stomach will be empty, while in a case of motor insufficiency that stomach will contain a great deal of food. The stomach will succeed in grinding down and pushing through this food in twelve or thirteen hours during the night, with the patient in a recumbent position, merely leaving a turbid residue which microscopically will prove to consist of food granules. It is obvious that this method of finding a great deal of food in seven hours is a much more reliable criterion than finding microscopic particles entangled in the rugæ of the stomach wall twelve hours after a meal.

Chronic Gastritis.—The macroscopic appearance of the stomach contents is diagnostic. The stomach contents are very thick, very scanty and contain a lot of mucus. In advanced cases the contents are so thick and tenacious that they represent one mass of mucus. It is the most difficult thing to fish this mucus out of the stomach. It can very seldom be taken out by the expression method, but it must be aspirated by an aspirator. There is very little gastric juice secreted by the stomach in such cases and the contents filter with the utmost difficulty. The bread is not in a state of fine division or emulsion, but consists of considerable sized morsels, just like bread that was only chewed and spit out. In less advanced cases considerable gastric juice is present. The gastric juice is usually of a yellowish color; the bread floats in it, just as if it were simply bread macerated in water instead of the almost white, very finely, uniformly divided particles forming an emulsion of normal stomach contents. Chronic gastritis is one of those conditions of gastric disease in which one look at the contents by the experienced eye diagnoses with certainty the presence or absence of the disease. The picture I have just depicted is pathognomonic of it. It matters not what the acidity is. Once there is mucus present, the mucus being thoroughly incorporated with the food (which differentiates it from mucus coming from the nasopharynx) it is a case of chronic gastritis. At times we find in carcinoma some mucus, as the cancer brings about a secondary gastritic process in the stomach, but the histories of such cases are so much at variance that no difficulty in diagnosis need arise. I met lately a case in which the contents looked thin, watery and a large quantity of it was secured, with very little solids in it, and it looked like a typical hypersecretion case. On putting it into the

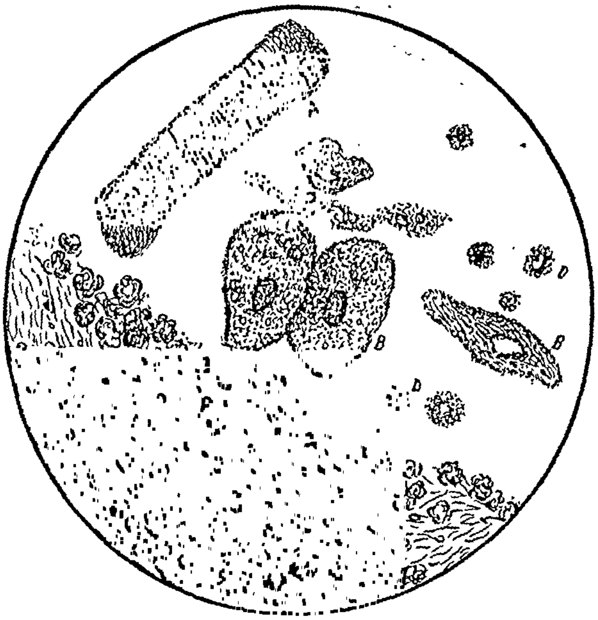

Fig. 6.—E. R.: Chronic gastritis. Washings from fasting stomach; A, muscle fibers; B, epithelial cells; C, a mass of mucus; D, mucous corpuscles. Leitz No. 7 objective; Ocular No. 4.

filter, however, I noticed some stringiness in it. It proved not to contain any free hydrochloric acid and this was thin mucus and not gastric juice, as first supposed. This is the only one of its kind I ever saw.

The surest way of recognizing mucus, when not present in large quantity, is by pouring the stomach contents from one vessel into the other or into the filter for filtration, when the particles of food are seen to be held tenaciously together in a stringy, sticky mass. Sometimes the whole quantity secured is rolling down *en masse;* while in the absence of mucus the particles of food show very little cohesive properties and each one separates readily from the other. The mucus of the stomach is found in two distinct forms. One consists of glassy, swollen and sticky lumps. The other consists of white flakes, strings or shreds. The difference in this appearance depends on the presence or absence of free hydrochloric acid. The first variety is seen in cases of anacidity, the second variety is present in cases of normal or hyperacidities. To differentiate mucus of the stomach from that of the nasopharynx, the stomach mucus is intimately associated and mixed with the food, while pharyngeal mucus is seen as isolated balls, it is purulent and often foamy.

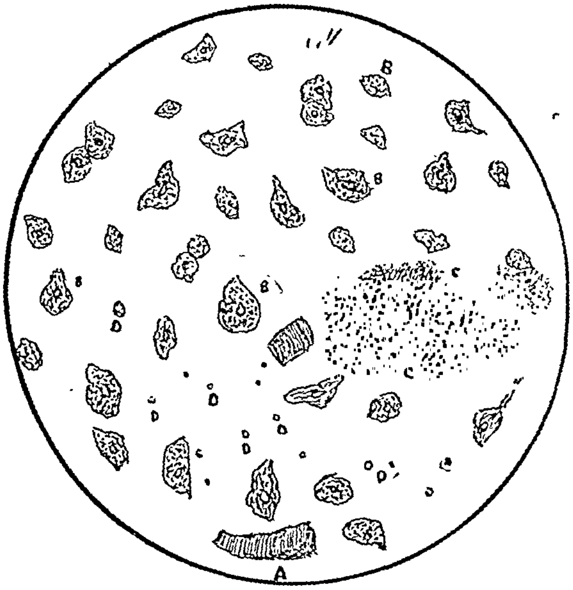

Fig. 7.—E. R.: Chronic gastritis. Washings from a fasting stomach; A, muscle fibers; B, epithelial cells; C, mucus; D, mucous corpuscles. Leitz No. 3 objective; Ocular No. 4.

Microscopic Examination: On microscopic examination, chronic gastritis presents a characteristic picture which can be differentiated from all other stomach diseases, except that in some cases carcinoma resembles it. The starch is but faintly stained with the iodin solution. The muscle fibers, if the patient took a meat meal, present very marked striæ, as they are unchanged, not having been acted on by the gastric juice, which is of very low acidity and of very poor enzyme content. The contents are full of mucus, which under the microscope is recognized as dark, stringy masses holding entangled in their meshes large numbers of epithelial cells and mainly round cells resembling leucocytes. Large numbers of epithelial cells are seen throughout the field, and micro-organisms. It is this picture of the mucus with the large number of round and epithelial cells that make up the pathognomonic picture of chronic gastritis, and there is only one stomach disease that may resemble it, namely, carcinoma of the stomach.

This microscopic picture can be employed as a very reliable guide to differentiate the grave diseases of the stomach with anatomic changes in the mucosa (ulcer excepted), such as gastritis or carcinoma, from the neuroses of the stomach. A picture like this points most decidedly to a condition attended by changes in the gastric mucosa, while the absence of this picture assures us either that there is nothing the matter with the stomach at all or that the stomach is afflicted with a disturbance of its nervous apparatus. It has served in my hands time and again for this purpose with elegance and precision.

The microscopic appearance of the washing of an empty stomach is equally characteristic of its condition. We find a lot of mucus, large numbers of epithelial cells, round cells in large numbers and especially round cells looking like leucocytes, which are most likely mucoid cells. A fair number of micro-organisms are present. I will repeat again for the sake of clearness that mucus is represented microscopically by a stringy medium studded all over mostly with round cells—mucoid cells—and also some pavement epithelia. It is rather of a dark yellowish color, when specimen is stained with iodin solution and rather dark when unstained. A strong iodin solution stains it blue and may then be mistaken for starch.

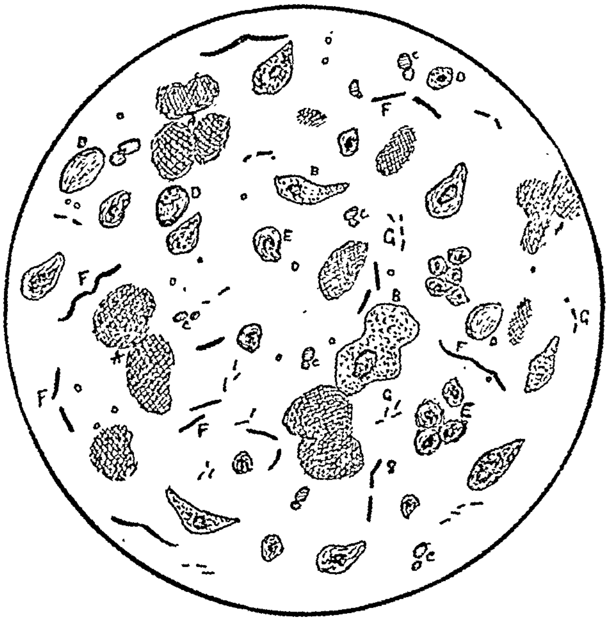

Fig 8.—Carcinoma ventriculi. Test breakfast; A, starch; B, epithelial cells; C, yeast cells; D, fat globules; E, round and mucoid cells; F, Boas-Oppler bacilli, single and in chains; G, micro-organisms. Leitz No. 7 objective; Ocular No. 2.

Carcinoma of the Stomach.—The contents are thick; very little gastric juice as a rule. At times there is some juice, but the bread in it looks just as if it were soaked in it. Large undigested particles of food, chiefly meat, if the patient has no aversion to it, are found in the stomach contents. Very often we get coffee-grounds with it, when the carcinoma ulcerates and small hemorrhages take place. The contents look at times not unlike feces, coming out through the stomach-tube like molds in large quantities. An appearance like this latter is pathognomonic of cancer. It is met in those cases in which the carcinoma invades both the pylorus and the stomach wall. Carcinoma contents look very much at times like those of chronic gastritis, but in the latter there is a good deal of mucus, while in carcinoma mucus is rather uncommon, although it is encountered in some cases, since the cancer often induces a secondary gastritic process in the part of the stomach not invaded by the cancer. The odor in cancer contents is offensive.

Microscopic Appearance: The starches are very well digested and they are, therefore, stained but faintly with the iodin solution. Fat globules are usually present, since in most carcinomas, even in those that are not situated at the pylorus, the motility is below par, and some stagnation is present, and, therefore, fat globules are the rule even with an Ewald test breakfast. We seldom find muscle fibers, since these patients develop an aversion to meat. Should we give the patient some meat with the meal, we will find the muscle fibers very poorly digested, as the absence of the pepsin and hydrochloric acid leave the muscle fibers unaffected. Their striæ are prominent and intact. Large numbers of cellular elements, pavement, small round, large round and cuboidal epithelia, float around in great abundance more than in any other kind of stomach contents. They are, however, always single cells or a few together. Unfortunately, I never met large conglomerations of them, particles of tissue that should enable us to identify them as being fragments of a cancer. There is an absence of sarcinæ in cancer, even in cases in which the cancer invades the pylorus. The characteristic microscopic feature of cancer of the stomach, however, is the Boas-Oppler bacillus. This is a rod-shaped bacillus, non-motile, which forms long chains. It does not need any staining and can be easily identified even with a low power. There is no need for an oil immersion; a 6 or 7 objective (Leitz) brings out all its features. The Boas bacillus is an almost constant inhabitant of the cancer stomach. Most cases of cancer of the stomach show it. This is conceded by most authors. It is seen in larger numbers in washings of a jejune stomach than in food contents. It seems as if that bacillus were taking shelter in the folds of the stomach wall. It is of diagnostic value only when present in large numbers. A few isolated bacilli have no diagnostic significance. There has been considerable controversy among stomach specialists as to the origin of the Boas bacilli, some considering them as the result, while others consider them as the cause of lactic acid. While it is a well-known fact that the Boas-Oppler bacilli can produce lactic acid, it is equally well known that various micro-organisms are capable of producing lactic acid under favorable circumstances, i. e., when the bacilli are given plenty of time to act and when there is an absence of hydrochloric acid. Cancer of the stomach with its poor motility and its anacidity is admirably adapted to these purposes. I wish, however, to correct the prevailing erroneous idea that Boas bacilli and lactic acid always go together. I can state positively that I have met cases in which Boas-Oppler bacilli were present and no lactic acid and *vice versa*. I have seen several clear-cut chronic gastritic cases with presence of lactic acid, but no Boas bacilli were present. I took special care to ascertain that the patient had a lactic-acid-free test meal and did not ingest the lactic acid.

Other micro-organisms are also present in large numbers. The stomach teems with them in cases of carcinoma more so than in any other pathologic condition of the stomach.

Microscopic Appearance of Stomach Washings: The great abundance of cellular elements, pavement, round, cuboidal and cylindrical, the Boas-Oppler bacilli in large numbers and a very rich microscopic flora make almost a diagnostic microscopic picture.

Gastric Erosions.—In siphoning stomach contents or in doing lavage we sometimes find bits of gastric mucosa of variable size. They are red in color and may be mistaken for bits of fresh meat or corned beef, the differentiation of which is often made possible only through microscopic examination. Dr. Max Einhorn[3] has described conditions in which these bits of mucosa have been especially prevalent, as a separate disease, by the name of gastric erosions. These bits of mucosa cannot be caused by trauma, such as could be inflicted by the stomach-tube, since their finding is not accompanied by bleeding. While it is of great interest to make sections of them for microscopic studies, most writers agree that these bits of mucosa cannot serve as true representatives or samples of the general condition of the gastric mucosa.

Nervous Dyspepsia and Other Gastric Neuroses.—These present nothing distinctive in the appearance of their stomach contents and give the same picture, both in gross and microscopically, as normal stomach contents. There is no better guide in differentiating a neurosis of the stomach from an organic lesion (except ulcer) than by the gross and microscopic examination of the stomach contents. A normal macroscopic and microscopic picture of stomach contents with a stomach history, provided we can rule out diseases of other organs, means a gastric neurosis.

In conclusion, I wish to thank my brother, Mr. Samuel Weinstein, for his painstaking execution of the drawings.

61 East One Hundred and Seventh Street.

THE WORK OF A COÖPERATIVE HYDROTHERAPEUTIC ESTABLISHMENT *

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BOSTON

In 1903 Dr. James J. Putnam and a number of other Boston physicians established a cooperative hydrotherapeutic institution under the name of the Medical Baths. Rooms were secured and equipped on the top floor of a modern office building conveniently located near the residential part of the city. The object of the enterprise was to furnish facilities for hydrotherapeutic treatments, especially those that require elaborate apparatus and skilled operators, so that all physicians in Boston and vicinity might avail themselves of these approved forms of treatment. At that time there was not a hydrotherapeutic douche apparatus or an electric light bath in the city, and the physicians who wished to have a patient given a wet-sheet rub or a carbon dioxid bath did not know where to find a man or woman familiar with the proper hydrotherapeutic technic.

At a meeting of physicians called by Dr. Putnam in October, 1903, it was decided that there was enough interest in hydrotherapy among physicians to make the plan of maintaining a [illegible] institution feasible and desirable. The institution when opened consisted of a large reception-room, five dressing-rooms, a large treatment-room, a douche-room, two toilet-rooms and two storerooms. The services of a professional decorator were secured in arranging tasteful and appropriate furnishings. Every aid to cleanliness and cheerfulness was introduced and the rooms were lighted from above as well as from the sides. In the large treatment-rooms yellow-stained and leaded glass was used in the windows which form nearly the entire side of the room. This shut out a dreary scene made up of chimney tops and railroad tracks and gave the effect of diffuse sunlight; the suggestion of warmth was produced even on a dark winter's day. The expense of fitting up the rooms amounted to about $2,000; and this was paid by gifts and loans from friends interested in the enterprise. Pledges amounting to $2,000 were secured to cover a possible deficit during the first year. To this guarantee fund many physicians subscribed. A complete douche apparatus and two hot-air cabinets were furnished by Dr. Putnam. The management of the establishment was in the hands of a committee composed of Dr. J. J. Putnam, E. G. Cutler and R. W. Lovett. I was made the medical director.

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[3] Einhorn, Max: Med. Rec., June 23, 1894.

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

In his first annual report Dr. Putnam said:

> With the increasing experience of our operators, there is no malady for which patients now take long journeys to distant water-cure establishments that cannot here be adequately treated. It is, moreover, unique in being a physicians' establishment, founded to promote the needs of the profession and their patients as well as the education of students and nurses as far as that is practicable, and conducted in such a manner that physicians can send their patients without fear that their relations to them will be anything but strengthened.

Nearly five years have passed since the above was written and time has demonstrated that the institution fills a real need. Furthermore, it has won the confidence of the medical community. Recently a circular letter was sent to 2,000 physicians in and about Boston asking them if they approved of our establishment and inviting criticism. Ninety-eight per cent. of those who replied wrote in commendation of the work.

PRESENT ORGANIZATION

In December, 1908, the enterprise was incorporated under the name of the "Institution for Physical Therapeutics." This placed it on a proper financial basis. If the institution had failed previously, or if suit had been brought against it, the committee of three physicians would have been liable for any amount. The capital stock of $10,000 is divided into four hundred non-assessable shares of $25 each. A circular letter was sent to every physician in eastern Massachusetts setting forth the purposes of the organization and inviting subscriptions for stock. The corporation is governed by a board of nineteen directors, consisting of seventeen physicians, one lawyer and one financier. The details of management are in the hands of an executive committee composed of five directors, including the president, Dr. J. J. Putnam. There is a restriction on the transfer of stock which will prevent it from passing out of the hands of physicians and will enable the corporation to purchase stock of any who wish to sell. It is the purpose of the directors to use any profits that may be realized to making improvements and in advancing physical therapy rather than in paying dividends on the stock.

Last year three more rooms were added, so that now there are accommodations for eight patients. This permits a rest in bed for several hours, if that is desirable, as it often is in connection with sedative procedures. With the smaller number of rooms it was sometimes necessary to cut short the period of rest, as the room was needed for another patient. The superintendence of the establishment is in the hands of a matron, who arranges the appointments for treatments, receives the patients, assigns the rooms and collects the fees. If the operators are negligent or if complaints are made by the patients she reports at once to the medical director.

The forenoons are given up to women patients, the afternoons to men. All treatments are by appointment. There are two chief attendants, a man and a woman, and each has an assistant. All four of the attendants were trained in an excellent school of medical gymnastics and are skilled in mechanotherapy as well as in hydrotherapy.

RECORD OF A CASE OF SLIGHT CARDIAC INSUFFICIENCY (MR. B. E. B.)

	Before CO_2 Baths.						After CO_2 Baths.			
1908 Oct.	Pulse.	Blood-Pressure.	Temp.	HCl. c.c.	Na_2Co_3 Gm.	Duration, Min.	Pulse.	Blood-Pressure.	Remarks.	Wgt.
7	64	105	91	400	800	10	66	115	Dry rub, rest 25 minutes.	171½
9	64	105	90	500	1000	11	72	115	Dry rub, rest 25 minutes.	...
12	64	110	89	600	1200	12	64	125	Dry rub, rest 25 minutes.	...
15	72	105	88	700	1400	13	76	115	Dry rub, rest 25 minutes.	172
17	68	105	87	800	1600	14	72	110	Dry rub, rest 25 minutes.	...
28	68	120	86	900	1800	15	72	145	Dry rub, rest 25 minutes.	...
31	72	150	85	900	1800	16	72	150	Dry rub, rest 25 minutes.	171½
Nov. 5	68	130	84	700	1400	13	60	146	Dry rub, rest 25 minutes.	170
7	64	125	84	700	1400	13	44	145	Arc L. before bath 10 minutes. Dry rub, rest ½ hour.	...
14	60	125	87	800	1600	14	66	143	Arc L. before bath 10 minutes. Dry rub, rest ½ hour.	170

No patient is treated unless he brings a prescription from a physician. A detailed record is kept by the operator of each treatment. Accompanying is the record in a case of slight cardiac insufficiency for which carbon dioxid baths were prescribed.

The chief attendant reports to the director daily the name of each new patient and the immediate effect of the treatment. The majority of treatments come under the head of stimulating or tonic procedures. These consist of a cold application to the warmed skin. If the cold procedure prescribed is not too intense for the individual's reactive powers a good reaction always results provided the treatment is properly given. If a good reaction is obtained, then the effect, so far as the attendant is concerned, is satisfactory. The following day the physician is informed that his patient has had the first treatment and a note is added in regard to the reaction. Last year when a physician referred a patient to the institution for the first time a letter like the following was sent to the doctor:

> Our chief attendant reports that your patient, ————, took his first treatment yesterday at the Medical Baths and a good reaction was obtained.
>
> We are urging all physicians who are sending patients to the baths to familiarize themselves with the details of modern

hydrotherapeutic technic. No one can doubt that hydrotherapy, the most important of all the forms of physical therapy, will play as important a part in the therapeutics of the future in America as it does to-day in Germany.

If physicians accompany their patients for the first few treatments they soon gain a working knowledge of hydrotherapy, and the effect of the doctor's presence on the patient as well as on the attendant is beneficial. When patients begin a course of hydrotherapeutic treatments they are frequently apprehensive and distrustful. Those physicians have obtained the best results who have been present at one of the first treatments. They have been able to arrange or to discuss with the attendant the details of the hydrotherapeutic procedure and to observe its immediate effect. If this plan is followed it will be found that the patients take up the course of treatments with more confidence and earnestness. This is particularly true in the case of neurasthenic patients in whom the psychic effect of the treatments is especially pronounced.

EQUIPMENT

The chief apparatus is as follows:

1. Electric light cabinet. This is an octagonal box lined with plate-glass mirrors and lighted with eight rows of six incandescent lights.
2. Two cabinets for hot-air and vapor baths.
3. Incandescent electric light bath for treating single parts of the body.
4. Arc-light with reflector for local treatments.
5. Local hot-air bath.
6. Douche-table with which a large tank for hot water and a pressure pump is connected. Temperature and pressure are completely under the operator's control.
7. Circular douche (needle-bath).
8. Rain douche (shower-bath).
9. Horizontal douche (spout).
   (a) Jet douche.
   (b) Fan douche.
10. Ascending or perineal douche.
11. Sitz-bath.
12. Porcelain tub used for
   (a) carbon dioxid baths.
   (b) electric baths.
   (c) half-baths.
   (d) full baths.
13. Electric cabinet (galvanic, faradic and sinusoidal).

FORMS OF TREATMENT

They can be divided into two classes, (1) the general and (2) the local. Most of the general treatments can in turn be separated into the stimulating and the sedative.

The immediate object of the stimulating or cold-water treatments of short duration is to produce a good reaction.[1] One understands by a reaction the secondary dilatation of the cutaneous vessels which follows their primary contraction produced by the stimulus of the cold water. There is an increased flow of blood through the dilated vessels, the skin reddens and there is a pleasant sensation of warmth, often accompanied by a feeling of well-being.

To promote a good reaction the skin should be warm and filled with blood before the application of the cold water. For this purpose we use chiefly electric light baths of short duration. Formerly hot-air baths were employed, but light baths are more satisfactory. In general the colder the water, the shorter its application; and the greater the force of impact on the skin, the more prompt and intense the reaction.

The mode of drying the patient and the after-treatment are important considerations in the production of a reaction. Rough towels should be used and vigorous friction applied to the body. If the individual is weak and anemic it is well after the treatment to put him to bed well rolled up in blankets and, if a reaction does not promptly develop, to place hot-water bottles at the feet and over the spine. If the patient is strong and vigorous it is advisable for him to dress without delay and take a short, brisk walk which will promote the reaction. Active measures are always better than passive, unless the patient is enfeebled. Hence, a walk after the treatment is better than massage if the condition of the patient permits.

Failure to understand the nature and significance of the reaction accounts for many mistakes in preparing hydrotherapeutic prescriptions. A measure of the reactive power of the patient can be obtained with the procedure known as the ablution with friction. This is the *Teilwaschung* of the Germans. It is the mildest general treatment, and can be employed to advantage even in the treatment of feeble, bedridden patients. The water is best applied with a wet bath mitten. One part of the body after another should be rubbed, first with cold water (50-75) and then with a rough towel. If the circulation is poor alcohol may be added to the water. The skin of the part treated should become red and warm. The intensity of the local reaction furnishes a guide to the selection of the proper tonic measure. If a good reaction is obtained with the ablution, stronger measures may be used, of which the douches have the greatest range of usefulness. A prescription that I often give is the following:

℞.

Electric light bath for	5 to 10 minutes
Circular douche at 105°	30 seconds
Circular douche at 90°	30 seconds
Jet and fan douche to entire body at 70°	20 seconds

Pressure, 10 pounds.

Repeat daily, gradually increasing pressure of jet douche and lowering terminal temperature until pressure of 20 pounds and temperature of 60° are used.

The following is a list of general stimulating treatments:[2]

1. The ablution (wet mit. friction).
2. The wet-sheet rub.
3. The half bath. Temperature, 70 to 85. Duration 1 to 5 minutes.
4. The douches:
   (a) circular douche, 60 to 70. Pressure, 8 to 15 pounds; duration, 50 to 60 minutes.
   (b) Jet and fan douche, 60 to 75. Pressure, 10 to 25 pounds.
5. The faradic electric baths. Temperature 90 to 93.
6. The carbon dioxid baths. Various strengths; temperature 85 to 92. Duration, 7 to 15 minutes.

The chief sedative treatments are as follows:

1. The wet pack.
2. The dry blanket pack.
3. The hot-air bath. Temperature, 115 to 140. Duration, 15 to 25 minutes.
4. The electric light bath. Temperature, 110 to 140. Duration, 15 to 30 minutes.
5. The neutral full bath. Temperature, 90 to 93. Duration, 10 to 45 minutes.
6. The hot full bath. Temperature, 104 to 108. Duration, 5 to 10 minutes.
7. The galvanic bath. Temperature, 90 to 93. Duration, 5 to 15 minutes.
8. The sinusoidal bath. Temperature, 90 to 93. Duration, 5 to 15 minutes.

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[1] The cold procedures of longer duration so valuable in combating infectious fevers are not discussed in this paper.

[2] The technic of the different procedures will be found described in detail in the excellent works of Matthes, Baruch, and Kellogg on hydrotherapy.

Local treatments with heat produce hyperemia and are used chiefly to relieve pain, to lessen inflammation, and to improve the nutrition of the affected part. They are most useful in the treatment of the various joint troubles, neuralgia, neuritis and muscular affections.

1. Electric light (incandescent) bath.
2. Arc light with reflector.
3. Hot-air bath.
4. Hot-air douche.
5. Hot-water douches:
    (a) Simple hot douche.
    (b) Scotch douche.
    (c) Alternating douche.
6. Fomentations.

Of the various treatments given in the above list we use the electric-light bath, the wet mit friction, the circular and horizontal douche and the carbon dioxid bath more than all others combined. The hot-air and vapor baths are rarely employed, as their place has been taken by the electric light bath. Nearly all patients object if the hot-air bath is substituted for the light bath. The light bath of short duration usually produces the sensation of a pleasant stimulation, while a hot-air bath often gives rise to a slight feeling of oppression. Sweating occurs more quickly and at lower temperature in the light bath.

Simplicity in prescribing is well nigh as important in hydrotherapy as in pharmacotherapy. In some American sanatoriums a confusing variety of treatments are given to a single patient. This practice has all the faults of the ordinary "shotgun" prescriptions and at the end of several weeks it is impossible to decide which of the various procedures used has had a beneficial effect.

In writing prescriptions the exact temperature of the water should be stated and the exact duration of treatment. Cold water and hot water are relative terms. Tap water is commonly regarded as cold water. Yet it varies in Boston from 40 degrees in winter to 75 degrees in summer . It should be remembered that hydrotherapy is really thermotherapy, for it is the heat of the water and not the water itself that is the therapeutic agent. A full tub bath at 80 degrees, of five minutes' duration, has a tonic action, but a full tub bath of 92 degrees, of fifteen minutes' duration, has a pronounced sedative effect.

INDICATIONS OF HYDROTHERAPY

Hydrotherapeutic procedures are of value in the treatment of almost all chronic diseases. I have found them of great help in improving the general condition of patients. An increase in appetite and a better circulation of the blood in the skin and subcutaneous tissues is usually observed; and there is a beneficial action on the peripheral nervous system and increased functional activity of the skin.

The importance of hydrotherapy in anemia, in malnutrition, and in convalescence from acute diseases is not sufficiently recognized. As it can lessen pain and give a sense of physical comfort, it has a wide field of usefulness in the care of patients suffering from incurable and fatal diseases. Special emphasis should be placed on the fact that the simple physical measures can often replace the objectionable narcotics in the treatment of chronic maladies. A patient with tabes who had not had a good night's sleep for six months owing to lightning pains was able to sleep and to keep at his work an entire season with the aid of neutral and carbon dioxid baths without recourse to analgesics or narcotics.

Hydrotherapy is a most useful measure in cases of psychoneurosis that present somatic manifestations or in which the physical condition is not good. I have employed it with benefit in psychasthenia and other mental disturbances. Hydrotherapeutic measures given by skilful attendants in a well-equipped and well-conducted institution have an important psychic influence for good. This is increased by the general sense of refreshment and invigoration produced by the reaction that follows a stimulating procedure. In individuals who are not readily suggestible definite sensations of physical well-being are often necessary before there can be any improvement in the mental condition. Hope of recovery is not infrequently strengthened as a result of a good reaction, and fears and anxieties temporarily cast aside.

Cold applications exert a definite influence on the will-power, the effect of which on the psychical condition, as Brieger points out, should not be underestimated. The patient is subjected to cold stimuli, which often produce unpleasant sensations, especially at the beginning of the treatment. Sooner or later the patient realizes the beneficial action and then willingly submits to the initial feeling of discomfort. This develops increased mental stamina. Hydrotherapy should, of course, form only a part of the treatment, and other measures, such as diet, rest, isolation, exercise, work, and drugs, should be used as indicated.

The great majority of the patients sent to our institution have been affected with various forms of psychoneurosis. There have been many joint cases, not a few of which have been arthralgias of psychic origin, although most of these were mistaken for chronic rheumatism. The number of patients with arthritis, anemia, nephritis, neuralgia, neuritis and other organic diseases have been small. It is hoped that as knowledge of hydrotherapy increases among the profession it will be used more in these conditions. In Berlin during a space of less than three years 504 cases of sciatica were treated by Brieger in the hydrotherapeutic institution of the university. During the same period we treated less than half a dozen cases of sciatica in our institution, yet there was no other place in Boston where the methods employed by Brieger were available. This means that many sufferers from the disease in Boston were denied the most approved treatment for the subacute stage.

In disturbances of psychic origin the immediate effect of the treatment on the mind of the patient can never be predicted. Sometimes there is speedy improvement, but often subjective symptoms remain unchanged or are increased after the first one or two treatments and the idea gets fixed that no benefit will result. But persistence in treatment over weeks and months often leads to great improvement or even cure in this class of cases. Success depends largely on the masterfulness of the physician in charge. Dr. Baldwin has shown that remarkably good results can be obtained in time even in severe psychoneuroses if the doctor is tactful and controls the patient with a firm hand.[3]

Many cases of neurasthenia are seen in which it is difficult to determine whether a stimulating or a gentle sedative treatment is indicated. Every patient must be studied individually, and it may take some time before the proper procedure is found. No two cases are quite the same. As George Beard truly said, "If two cases are given the same treatment from beginning to end it is probable that one of them has been improperly treated." I have sometimes followed the practice of Binswanger in giving three different treatments on three successive days. After these have been repeated once or twice the treatment which seems to the patient to be most beneficial is selected. Usually one of the procedures will be condemned and one favored. In this way the support and confidence of the patient is gained.

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[3] Baldwin: The Personal Element in Prescribing Hydrotherapy, Boston Med. and Surg. Jour., 1909, clx, 468.

The following sample outline of treatment is given as a suggestion:

First Day: Electric light bath, 5 to 10 minutes, followed by wet mit friction.

Second Day: Carbon dioxid bath (half full strength), 10 minutes.

Third Day: Wet pack, duration 45 minutes to 1 hour.

Repeat treatments in the same order on the fourth, fifth and sixth day.

From half an hour to an hour of physical and mental rest should follow each treatment, unless the patient is robust and with good reactive powers, when a brisk walk may be substituted. Often it is a good idea to combine rest and exercise by having the patient dress quickly, walk a certain distance and on reaching home rest in bed for thirty minutes to an hour. A good proportion of the neurasthenic patients wish to discontinue treatment after the first or second bath has been taken. In many neurasthenic women a feeling of exhaustion comes on a short time after the treatment and persists the remainder of the day. This is usually regarded both by physician and patient as evidence that the hydrotherapeutic procedure has been too strong, but, as this temporary exhaustion develops after the mildest treatments and as it almost invariably disappears after the second or third treatment, the sensation of weakness is undoubtedly due in the great majority of cases to the nervous strain of the visit to the institution. The surroundings are new and the appliances are strange and somewhat formidable in appearance. I have known even physicians to appear nervous and apprehensive when placed in the electric light cabinet for the first time. Recently I saw a patient in whom weakness and depression persisted until the sixth treatment. Since then she has felt refreshed and invigorated after the bath for the rest of the day. It was possible to prove beyond question in this instance that the weakness was of purely psychic origin because the patient felt as tired after a mild treatment (wet mit friction) as after a strong one (circular and horizontal douche).

For patients who cannot afford daily treatment at our institution I prescribe three treatments a week at the Medical Baths and a home treatment in the form of a neutral bath, or half bath, on the other days. It is well to have the home treatment taken at the same hour as that at the institution.

After considerable experience with carbon dioxid baths in the treatment of cardiac insufficiency I can only say that they have seemed to be decidedly beneficial in certain cases. The carbon dioxid baths raise the blood-pressure and produce in some instances a transitory reduction of cardiac dilatation. Often I have failed to note any improvement, and never when the heart muscle was markedly weakened. In the cardiac neuroses they are of undoubted value. Care must be exercised to select a bath of proper strength. Weak hearts are frequently overtaxed by strong baths. I have observed cases in which the congestion-dilatation of the heart was distinctly increased by the bath. If there is a fall in the blood-pressure after the bath (temperature 87 to 92 F.) it indicates that the heart is weak and the bath too strong. We usually begin the treatment with a bath one-fifth or three-tenths full strength.[4] The attendants take the blood-pressure before and after every carbon dioxid bath. I have found that the action of baths of different strength on the blood-pressure furnishes a useful method for determining the functional power of the heart muscle.

INFLUENCE OF THE INSTITUTION IN ADVANCING PHYSICAL THERAPEUTICS

The facilities of the Boston establishment have been utilized at different times during the past five years by about 200 physicians in the treatment of their patients.

Since the opening of this institution several Boston hospitals have installed hydrotherapeutic equipments. Several skilled attendants employed in local hospitals were trained in the technic of water treatments at our institution.

Demonstrations in hydrotherapy have been given to students of the different medical schools in this city.

Our organization, cooperating with local medical societies, has secured several addresses by prominent physicians on hydrotherapy and other forms of physical therapeutics.

Reprints of articles on hydrotherapy have been sent to over 2,000 physicians in eastern Massachusetts.

The institution has been visited by physicians from many parts of the country and establishments patterned in a measure after ours have been started in other places.

313 Beacon Street.

ABSTRACT OF DISCUSSION

Dr. John A. Lichty, Pittsburg, Pa.: Such an institution as described by Dr. Pratt is, I think, a necessary adjunct to the physician's armamentarium. If the physicians do not become active and take up this matter, the quacks will, and with great harm to the patients. All of us no doubt have had the same experience. I have in mind one patient with loss of cardiac compensation, enlarged liver, etc., who went to an ordinary masseur, or a man who called himself "professor of hydrotherapy" to have his enlarged liver reduced in size. The massage and exercises prescribed led to serious results. This I have seen frequently, and I believe we should protect ourselves against these men. Unless we establish such institutions, we will be at the mercy of these men. The difficulties mentioned I believe to be the difficulties one would expect naturally in trying to treat ambulatory patients. It is difficult to prescribe a treatment to be taken in the patient's home. If the patient will go to a hydropathic institution, he will go to the physician's office. If a woman is to take the treatment, she dresses, goes down the street, takes the treatment and then goes to a department store to do her shopping. The good that follows the carrying out of such a course, under such difficulties, is small. In Pittsburg, such an institution is about to be opened, and I think we shall get good results from it. If we could send patients to Boston and have them devote the time necessary for the treatment in Dr. Pratt's institution, I know good results will follow; I also believe that if those patients who were not much benefited at his institution in Boston, were sent to a similar institution at Pittsburg, away from their home and environment, in all probability good results would follow. These patients take the treatment much better in institutions devoted to that purpose. In this country the watering-places and institutions are not manned as in other countries. Some of the best scientific work originates in some of these establishments in Europe. Good men are there to watch their patients carefully and prescribe the treatment to be employed. There are very few institutions in this country where the patients can be so treated; what is being done in this line, however, is being appreciated. At these watering-places the patients can enjoy themselves. The treatment in this country is a business; there is no amusement, no enjoyment for the patients in the institutions we have here. It is different in the watering-places in Europe. One advantage that is coming from the establishment of these institutions is the education of helpers so that the treatment may be carried out in the patient's own home. I am sorry Dr. Babcock is not here to tell of the Nauheim treatment as he has it carried out in the patient's own home. Nauheim himself has stated that it cannot be done at home; but Dr. Babcock has proved that it can be done and with very satisfactory results when the conditions can be entirely controlled.

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[4] Detailed directions for preparing the baths are given in Matthes' Lehrbuch der klinischen Hydrotherapie, Edition 2, Jena, 1903, and in Romberg's Lehrbuch der Krankheiten des Herzens, Stuttgart, 1906.

DR. G. C. SMITH, Boston: Dr. Pratt's work in Boston is well known throughout the New England States, and especially in Massachusetts, while in the South and West people have heard much less about it.

One or two points suggested by the paper I would like to touch on. There is a class of cases in which I have found hydrotherapy especially adapted, namely, vasomotor conditions with a neurotic etiology; also vasomotor conditions arising from a failing heart in cardiac disease, a condition so often seen in young boys and girls. These conditions are quickly relieved by hydrotherapeutic measures. Often patients who have been very little benefited by drug treatment can be satisfactorily treated by good sanitary measures, open-air life, proper diet and hydrotherapy, and show rapid improvement under such conditions. Other patients who do much better in America than abroad are the patients with broken compensation. This is my opinion after a study of the institutions abroad. The reason is that the physician knows the patient and is interested in him; he knows all the individual's idiosyncrasies. At Nauheim or other sanitaria abroad the patient is treated more largely from a cardiac standpoint which does not always work out well. I have had many patients try the Nauheim treatment, and they still continue to try it. They go abroad and spend from four to six weeks, and sometimes it is claimed that the transverse cardiac dulness has been reduced two inches in that time. That is absurd. The only way to do away with the stupendous outflow of the misinformed and misled from this country is to let the real facts be known. I know of several individuals in Boston who have been treated at Nauheim and other spas abroad who now make it a regular thing to consult the family physician in Boston and have a thorough examination before going. On their return they do the same thing. In these patients we cannot find the same diminution in the cardiac dulness as the foreign physicians claim. I am sure that hydrotherapy does help these patients. It must be remembered that many patients who have cardiac disease must be treated at home, and that this number is much greater than the number going abroad.

DR. ANDREW MACFARLANE, Albany, N. Y.: The first duty of the physician is to cure his patient, and there is no question that the true way to do this is to find out the cause of his difficulty and remove it. This, however, does not appeal to the popular mind. Consider what has been done to stop the spread of smallpox by vaccination and to prevent typhoid fever by a pure water supply; the citation of such facts, however, does not present an argument to the average popular mind that will have any marked influence. If a patient with a stiff joint consults physicians, they are likely to give him pills, solutions, powders and liniments and often without much effect. The patient then goes two or three times to an osteopath, gets as many treatments and is benefited. He then is convinced that the osteopath is a better physician than the regular practitioner. He certainly is to that extent. The great mistake is that the medical profession does not appreciate the value of physical therapy. Physicians rely too much on giving prescriptions and then sending the patient home.

In New York State there is a man who conducts a successful sanatorium; he is an ex-prize fighter. Yet his place is frequented not by the ignorant, but by the most intelligent men in the United States. I regard it as a disgrace to the entire medical profession that an ex-prize fighter should be able to do, and to do successfully, what a scientific profession is not doing. In our various efforts to secure proper legislation in New York State we had the greatest possible difficulty in proving that the so-called regular medicine was better than fake medicine.

After taking the baths at the foreign spas the patients rest. I have visited many spas in Germany and I am fairly well acquainted with the conditions existing there. The Germans have developed the scientific side of metabolism in these watering-places to an extent which we would do well to copy and imitate.

I believe that the subject that Dr. Pratt has brought up is a most valuable one, and I have no doubt but that great advances will be noted in it during the next fifteen or twenty years; but we must not expect much from it in three, four or five years. This is, however, a subject that will bear much and good fruit in time.

DR. JOSEPH H. PRATT, Boston: It is true that many patients with neurasthenia and other forms of psychoneurosis can receive better treatment in a suitable sanatorium than at home, but sanatorium treatment is frequently out of the question owing to the expense. Boston physicians have been gratified at the good results obtained by home treatment combined with systematic hydrotherapy in their local institution. In addition to the hydrotherapeutic treatment itself, the daily visit to the baths, the association with a kindly and cheerful attendant or nurse, the half-hour or hour of rest before dressing, often have a marked influence for good on both mind and body. Furthermore, the institution is an aid to the physician in his supervision of the case. If a patient is told to take a treatment at a certain hour daily in our establishment, it is an easy matter to find out whether he does so or not. A report is sent to the physicians, if requested, of the number of treatments taken by each patient and the date of each treatment.

In the management of patients with chronic organic disease, treatments at the medical baths have been of aid in encouraging the patients to persevere in following an unpleasant or exacting regimen. This is true in cases of nephritis, obesity, diabetes and heart disease. In 1905 I saw with Dr. Daniel a woman with chronic nephritis who had been ill a year. She had marked general anasarca and the day urine contained over 1 per cent. of albumin. The essential features of the treatment instituted were electric-light baths and a salt-free diet. She objected strongly to the diet, but did not abandon the plan of treatment because she felt that the light baths were beneficial. Afer three months the edema had disappeared except for a slight swelling of the legs. When last seen, three years later, the edema had not recurred and the urine contained only a slight trace of albumin. It is probable that her recovery was due more to the salt-free diet than to the light baths, yet without them she never would have continued with the diet.

It is strange that American physicians who send patients to Nauheim make so little use of artificial carbondioxid baths Krehl, Romberg and other German authorities recommend and employ in their clinics the artificial baths. There are over a dozen natural carbon-dioxid baths in Germany used in the treatment of heart disease in addition to those at Nauheim. Two patients with cardiac disease whom I referred to a leading German consultant were sent not to Nauheim, but to Homburg. What I have learned from patients returned from Nauheim bears out Dr. Smith's statement. Treatments are often given there with inadequate supervision.

There is need of a thorough and unprejudiced investigation of the effects and value of carbon-dioxid baths, and this can well be carried out in establishments like the one described.

Infant Feeding.—It has been found by those who have studied the matter that one of the most potent causes operating to prevent or diminish maternal nursing is the ignorance of the mother as to what breast-milk really means to the child. For this state of things the remedy is instruction. Mothers need to be told in no uncertain tones that if they are able to nurse their babies and do not do so, they are morally responsible for the sickness and death resulting from their neglect. Few women possessed of any maternal instinct will refuse to nurse their children if this is made clear to them.—J. M. Connolly in *Hygiene and Physical Education.*

THE HISTORY OF TWO CASES OF CONGENITAL PYLORIC SPASM

WITH REMARKS ON THE ETIOLOGY AND TREATMENT *

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The title of this paper is a misnomer, if it conveys the impression that by "pyloric spasm" is meant the mild and common affection described by Pfaundler[1] and Cautley[2] under this name and evidently considered by them a condition quite distinct from and not likely to be confounded with congenital hypertrophic stenosis, but which, from the description of these writers, seems identical with the habitual or chronic vomiting of infancy. An unbiased study of the already voluminous literature on this subject is, to my mind, convincing that there occurs, under the term "congenital pyloric stenosis," a group of cases in which spasm of the pylorus and adjacent gastric walls is the principal, and often the only, abnormal condition present. This group comprises the majority of the cases of so-called congenital pyloric stenosis encountered in practice, and embraces those of infants who recover entirely under intelligent dietetic and other measures. It is the existence of this group which has given rise to the great confusion and division among observers as to the nature of congenital pyloric stenosis, and as to the means to be adopted for its relief—one class insisting that medical measures are sufficient for a cure, the other being equally positive that only surgical intervention can bring about permanent recovery. Notwithstanding that Heubner[3] places the incidence of pyloric spasm as but 0.5 per cent. of all children's diseases, the condition is not so very uncommon; a physician who sees many sick babies must encounter from time to time instances of the affection and although my cases might well, from the symptoms and history, be considered as mild instances of congenital pyloric stenosis, I believe that they come under the category of simple pyloric spasm, and as such they are reported.

REPORT OF CASES

CASE 1.—*History.*—G. B., a male, the first child of its parents, both of whom are and were healthy, although the mother suffered much from nausea during her pregnancy, was born after a natural labor, weighing 8 pounds. The child was suckled successfully by its mother, and weighed, at three weeks, 8¾ pounds. At this time, its illness began with occasional vomiting. This gradually increased, until it soon vomited after every meal, sometimes in small, sometimes in large quantities—now and then, more than it had swallowed at one meal. Obstinate constipation followed, the movements, which were quite natural, occurring only with enemas. Rapid loss of weight ensued, and the infant was taken from the breast. In rapid succession, condensed milk, malted milk, barley-water and egg-water, whey, and whey and cream, were tried. Of these foods, whey was the most successful, four ounces being gained in five days on it, when vomiting and loss of weight again set in.

Examination.—I saw the infant first on Oct. 2, 1908. It was then 12 weeks old, and weighed 7 pounds. It was thin and emaciated, and cried continually; the tongue was clean, and the breath sweet. That morning, it had the first spontaneous movement in five days—of good color, smooth and well digested. There was, therefore, beyond a certain amount of colic and gas, no evidence of indigestion. The abdomen was large above, and somewhat retracted below the navel. Apparently, the stomach was normal in size; but, as I have never been able to demonstrate to my own satisfaction the situation of this organ in infants, it is impossible to speak with certainty as to this point. Peristalsis could not be detected on the abdominal surface, nor could the pylorus be felt. All the other organs were normal. From this time the infant was under constant observation. The vomiting, I noted, was often explosive, often shooting out one to two feet from the baby; but at other times the stomach-contents were simply gulped up in quantities varying from a mouthful to two-thirds of a bottle; the vomiting was preceded quite frequently, with pain and contraction of the abdominal muscles. It was never especially acid, and always unaltered, whether the child was taking whey or the food on which it was afterward placed.

Treatment.—A mixture of condensed buttermilk (1 part buttermilk to 7 of water, of which 25 per cent. was lime-water), was given, two ounces every two hours, and daily lavage was instituted (salt-solution and sodium bicarbonate, one dram to a pint). After several passages of the tube, it was discovered that the stomach was never empty until two hours and three-quarters to three hours after feeding; and then, only when two ounces was given. Hence, the intervals of feeding were lengthened to three and a half hours, and the mother was instructed always to postpone the feeding half an hour, if, at or just before the meal, the child vomited. At first, the buttermilk caused diarrhea, as it often does; but this was quickly controlled with bismuth. Several examinations of the stomach-contents were made: Free hydrochloric acid was never present; the total acidity averaged 66 (about normal); pepsin-reaction was slight. Conclusive evidence of the hypertrophy, or, at least, the overaction of the pylorus and the stomach-wall, was given by the vigorous way in which the stomach would contract on the tube, after a certain amount of water had been introduced,—seizing it, and throwing its entire length into vibration; at the same time, forcibly pumping out the water, as if from a powerful syringe. After the infant had been under observation about a month, I first saw visible gastric peristalsis, and on several occasions thereafter; it was at times, feeble, at times, forcible and well marked. The progress of the child was extremely slow, and retarded by many set-backs. During these relapses, the weight would remain stationary or be lost; to be regained, as the vomiting ceased or diminished. The strength of the buttermilk and the quantity given was gradually increased; then whey was slowly added, and, finally, 20 per cent. cream; at first in small (half-dram) doses with each feeding. This process was continued until all the buttermilk had been discarded, and the baby was entirely on a cream-and-whey mixture. Further rehearsal of details would be tedious. The infant gradually recovered; the vomiting became less and less, and now, at the age of 10 months, the child weighs 22 pounds, all vomiting having ceased for a month.

This case, I believe, was one of simple spasm of the pylorus and adjoining gastric walls. It illustrates how patient, persistent and intelligent dietetic experimenting will often bring cases of this nature to a happy conclusion. More than once during its course was the question of operative interference considered; but a little more waiting always cleared up the atmosphere, so that, with the consequent improvement, the idea was dismissed.

CASE 2.—This infant, also a male, was first seen on Aug. 1, 1908, at the age of 5½ months. It then weighed 7½ pounds, having weighed 9 pounds at birth. The parents were healthy. The birth had been normal, and the baby had been vigorous for almost three weeks thereafter, when vomiting began. On account of this, it was weaned, and a modified milk-mixture was given. This not agreeing, whey, pasteurized whey, milk prepared with peptogenic milk-powder, condensed milk, and, finally, Eskay's food, were tried. Peptogenic milk seems to have been the most successful of these. Under its use, the vomiting almost ceased, and the weight, for a time, increased. When seen, the child was much wasted and very constipated, with one smooth, well-digested movement by enema daily. It was vomiting practically everything given; sometimes immediately after, sometimes long after, the three-hour feedings. The vomiting was at times projectile in character, being thrown out a foot or more from the patient. It was often very acid; and again, not at all. Of late, it had contained large quantities of mucus and gas. The upper portion of the abdomen was enlarged, and I thought that the stomach was dilated, as apparently it reached to the navel. Visible gastric peristalsis was not observed. The infant was bright and hypersensitive, starting suddenly at the slightest noise. A weak mixture of buttermilk-conserve (1 part to 6 of water, of which 33 per cent. was lime-water), three ounces every three hours and a half, together with hot epigastric applications, were advised; no medication. At first, improvement was noted; then loss. At the end of the month, however, a pound had been gained. (The buttermilk had been increased to 1 part to 4; the proportion of lime-water, 33 per cent., still being maintained). Because of the large amounts of mucus ejected, lavage with salt and bicarbonate of sodium (1 dram of each to 2 pints) was instituted. Whenever it was employed, diminution of vomiting and gain in weight resulted; but, owing to the mother's unwillingness and inability to carry it out, this procedure was used only at infrequent intervals. As the tube usually showed that the stomach was not empty until almost four hours after a feeding, the bottles were given at this interval (six times a day); and the mother was told to postpone the meals, if vomiting occurred at the time they were due. The progress of this baby was slow and painful, beset with relapses and most disappointing losses in weight. Notwithstanding this, the steps were slowly upward; after four months of treatment, the weight was 10 pounds (a gain of 3 pounds). After the buttermilk had been gradually increased to 1 part to 3, it was slowly replaced by fresh buttermilk (with 3 per cent. cane sugar and 1.5 per cent. wheat flour). Every attempt to add whey or cream to the mixture was followed by disaster. At these times only was the vomitus very acid; (usually it contained no free hydrochloric acid, with a total acidity of about 50). When fresh buttermilk was given, the lime-water was replaced by citrate of sodium (1 grain to the ounce); and that this was beneficial, was shown by an increase of vomiting on its withdrawal. To compensate for the small amount of food tolerated by the irritable pylorus, the former was strengthened by somatose and beef-juice (1 to 2 drams), with how much benefit, it is impossible to say. After the eleventh month, the vomiting diminished materially; so that now (thirteen and a half months) several days will often elapse without its occurrence, and the child weighs 14 pounds, has four teeth, and is undoubtedly on the way to complete recovery. At no time was visible gastric peristalsis observed.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Pfaundler and Schlossmann: Handbuch der Kinderheilkunde, ii, 18., 181.

[2] Cautley, E.: Brit Med. Jour., Oct. 13, 1906, p. 939 et seq

[3] Heubner, O.: Arch. Pediat., July, 1908, p. 555, abst. from Therap. Gegenw., October, 1906, p. 433.

The question as to the diagnosis in this case may be raised. I am sure, however, that it was one of pyloric spasm of extreme and obstinate degree, to which, from a long series of dietetic errors (five months) gastric distention and catarrh had been added. The expulsive vomiting, the early history, and the fecal movements of natural character, are sufficient to exclude simple chronic indigestion and pyloric stenosis. This case illustrates, even more than the first, how persistent and intelligent efforts at feeding will often bring success in the most obstinate instances of this affection. If there had been opportunity to have the infant under closer observation and control, it is possible that the improvement might have been more rapid.

Congenital pyloric spasm and congenital hypertrophic pyloric stenosis, though usually separable clinically, stand in close genetic relationship to each other. Hence, in considering the nature and etiology of pyloric spasm, a brief summary of its symptoms and of those of hypertrophic stenosis will not be out of place. The subjects are usually males. They are born healthy. They are commonly breast-fed. The vomiting begins from the third day to the third week, or later. It is without apparent cause, and may be very acid or entirely unaltered in character, and is often expulsive or projectile, and may exceed the amount taken. There is constipation, obstinate or partial, according to the amount of narrowing or spasm. Signs of indigestion or gastric catarrh are usually absent, at least in the early stages. Exaggerated gastric peristalsis, feeble or intense, from left to right, is almost always sooner or later observed. In the minority of the cases a mass is palpable in the pyloric region. There is rapid loss of flesh, keeping pace with the amount of vomiting. Pain (from spasm) is often present. The food remains in the stomach longer than the usual hour and a half, viz., from two to four hours.

This group of symptoms exists in greater or less degree, according to the nature of the case; whether it be one of pure or partial spasm or of true stenosis, and differs entirely from the habitual or chronic vomiting of infancy, in which there are always the evidences of indigestion, so conspicuously absent in the condition we are considering.

The conception of Koplik as to the relation and nature of the *affections* variously considered as pyloric spasm and pyloric stenosis seems reasonable and probably correct, namely: that in some of these cases there is simply pyloric spasm alone; that in others there is added to this some hypertrophy of the circular fibers, causing a more or less distinct narrowing of the orifice of the pylorus, but not sufficient materially to narrow its lumen, and permitting of the free passage of food in the absence of spasm; and that in still another variety the narrowing of the pylorus is so great as practically to close the opening, so that an actual stenosis exists. This last group comprises but a minority of the cases and includes those of patients relieved by operation alone.

That there may be a distinct anatomic change in the pylorus, and yet recovery ensue, although the pathologic condition remains, is shown by the case of Batten[4]: this patient exhibited the ordinary symptoms of hypertrophic stenosis and gradually recovered; but, at death, long after, was found to have the usual muscular hypertrophy of the pylorus. I think that the weight of evidence goes to show that in all cases spasm is a prominent and ever-present symptom, and is the cause of the symptoms observed during life; and, as in Batten's case, may and does subside, and yet the hyperplasia of the circular fibers persist. It would seem, also, from the purely clinical standpoint, that a simple spasm of the pylorus may exist without apparent anatomic change; yet it appears more reasonable to assume that in all cases there is some pathologic alteration in the structure of the pylorus, although very slight, which, under certain conditions—the swallowing of liquor amnii,[5] inappropriate food (whether from the breast or artificial), hyperchlorhydria, etc.—causes incoordination of the musculature of the pylorus and adjoining gastric walls, resulting, at last, in spasm. In a word, in cases such as I have reported as instances of simple pyloric spasm, there is underlying, as the primary cause of the spasm, a congenital defect of the circular muscle fibers at the pylorus, or of the nerves innervating them.

The relation, therefore, of the cases clinically recognized as pyloric spasm to those in which a true hyper-

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[4] Progressive Medicine, [illegible] 903, p. 218.

[5] Thompson, J.: The [illegible] and Treatment of Sick Children, Edinburgh a [illegible], [illegible], 1908, p. 122.

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The title of this paper is a misnomer, if it conveys the impression that by "pyloric spasm" is meant the mild and common affection described by Pfaundler[1] and Cautley[2] under this name and evidently considered by them a condition quite distinct from and not likely to be confounded with congenital hypertrophic stenosis, but which, from the description of these writers, seems identical with the habitual or chronic vomiting of infancy. An unbiased study of the already voluminous literature on this subject is, to my mind, convincing that there occurs, under the term "congenital pyloric stenosis," a group of cases in which spasm of the pylorus and adjacent gastric walls is the principal, and often the only, abnormal condition present. This group comprises the majority of the cases of so-called congenital pyloric stenosis encountered in practice, and embraces those of infants who recover entirely under intelligent dietetic and other measures. It is the existence of this group which has given rise to the great confusion and division among observers as to the nature of congenital pyloric stenosis, and as to the means to be adopted for its relief—one class insisting that medical measures are sufficient for a cure, the other being equally positive that only surgical intervention can bring about permanent recovery. Notwithstanding that Heubner[3] places the incidence of pyloric spasm as but 0.5 per cent. of all children's diseases, the condition is not so very uncommon; a physician who sees many sick babies must encounter from time to time instances of the affection and although my cases might well, from the symptoms and history, be considered as mild instances of congenital pyloric stenosis, I believe that they come under the category of simple pyloric spasm, and as such they are reported.

REPORT OF CASES

CASE 1.—*History.*—G. B., a male, the first child of its parents, both of whom are and were healthy, although the mother suffered much from nausea during her pregnancy, was born after a natural labor, weighing 8 pounds. The child was suckled successfully by its mother, and weighed, at three weeks, 8¾ pounds. At this time, its illness began with occasional vomiting. This gradually increased, until it soon vomited after every meal, sometimes in small, sometimes in large quantities—now and then, more than it had swallowed at one meal. Obstinate constipation followed, the movements, which were quite natural, occurring only with enemas. Rapid loss of weight ensued, and the infant was taken from the breast. In rapid succession, condensed milk, malted milk, barley-water and egg-water, whey, and whey and cream, were tried. Of these foods, whey was the most successful, four ounces being gained in five days on it, when vomiting and loss of weight again set in.

Examination.—I saw the infant first on Oct. 2, 1908. It was then 12 weeks old, and weighed 7 pounds. It was thin and emaciated, and cried continually; the tongue was clean, and the breath sweet. That morning, it had the first spontaneous movement in five days—of good color, smooth and well digested. There was, therefore, beyond a certain amount of colic and gas, no evidence of indigestion. The abdomen was large above, and somewhat retracted below the navel. Apparently, the stomach was normal in size; but, as I have never been able to demonstrate to my own satisfaction the situation of this organ in infants, it is impossible to speak with certainty as to this point. Peristalsis could not be detected on the abdominal surface, nor could the pylorus be felt. All the other organs were normal. From this time the infant was under constant observation. The vomiting, I noted, was often explosive, often shooting out one to two feet from the baby; but at other times the stomach-contents were simply gulped up in quantities varying from a mouthful to two-thirds of a bottle; the vomiting was preceded quite frequently, with pain and contraction of the abdominal muscles. It was never especially acid, and always unaltered, whether the child was taking whey or the food on which it was afterward placed.

Treatment.—A mixture of condensed buttermilk (1 part buttermilk to 7 of water, of which 25 per cent. was lime-water), was given, two ounces every two hours, and daily lavage was instituted (salt-solution and sodium bicarbonate, one dram to a pint). After several passages of the tube, it was discovered that the stomach was never empty until two hours and three-quarters to three hours after feeding; and then, only when two ounces was given. Hence, the intervals of feeding were lengthened to three and a half hours, and the mother was instructed always to postpone the feeding half an hour, if, at or just before the meal, the child vomited. At first, the buttermilk caused diarrhea, as it often does; but this was quickly controlled with bismuth. Several examinations of the stomach-contents were made: Free hydrochloric acid was never present; the total acidity averaged 66 (about normal); pepsin-reaction was slight. Conclusive evidence of the hypertrophy, or, at least, the overaction of the pylorus and the stomach-wall, was given by the vigorous way in which the stomach would contract on the tube, after a certain amount of water had been introduced,—seizing it, and throwing its entire length into vibration; at the same time, forcibly pumping out the water, as if from a powerful syringe. After the infant had been under observation about a month, I first saw visible gastric peristalsis, and on several occasions thereafter; it was at times, feeble, at times, forcible and well marked. The progress of the child was extremely slow, and retarded by many set-backs. During these relapses, the weight would remain stationary or be lost; to be regained, as the vomiting ceased or diminished. The strength of the buttermilk and the quantity given was gradually increased; then whey was slowly added, and, finally, 20 per cent. cream; at first in small (half-dram) doses with each feeding. This process was continued until all the buttermilk had been discarded, and the baby was entirely on a cream-and-whey mixture. Further rehearsal of details would be tedious. The infant gradually recovered; the vomiting became less and less, and now, at the age of 10 months, the child weighs 22 pounds, all vomiting having ceased for a month.

This case, I believe, was one of simple spasm of the pylorus and adjoining gastric walls. It illustrates how patient, persistent and intelligent dietetic experimenting will often bring cases of this nature to a happy conclusion. More than once during its course was the question of operative interference considered; but a little more waiting always cleared up the atmosphere, so that, with the consequent improvement, the idea was dismissed.

CASE 2.—This infant, also a male, was first seen on Aug. 1, 1908, at the age of 5½ months. It then weighed 7½ pounds, having weighed 9 pounds at birth. The parents were healthy. The birth had been normal, and the baby had been vigorous for almost three weeks thereafter, when vomiting began. On account of this, it was weaned, and a modified milk-mixture was given. This not agreeing, whey, pasteurized whey, milk prepared with peptogenic milk-powder, condensed milk, and, finally, Eskay's food, were tried. Peptogenic milk seems to have been the most successful of these. Under its use, the vomiting almost ceased, and the weight, for a time, increased. When seen, the child was much wasted and very constipated, with one smooth, well-digested movement by enema daily. It was vomiting practically everything given; sometimes immediately after, sometimes long after, the three-hour feedings. The vomiting was at times projectile in character, being thrown out a foot or more from the patient. It was often very acid; and again, not at all. Of late, it had contained large quantities of mucus and gas. The upper portion of the abdomen was enlarged, and I thought that the stomach was dilated, as apparently it reached to the navel. Visible gastric peristalsis was not observed. The infant was bright and hypersensitive, starting suddenly at the slightest noise. A weak mixture of buttermilk-conserve (1 part to 6 of water, of which 33 per cent. was lime-water), three ounces every three hours and a half, together with hot epigastric applications, were advised; no medication. At first, improvement was noted; then loss. At the end of the month, however, a pound had been gained. (The buttermilk had been increased to 1 part to 4; the proportion of lime-water, 33 per cent., still being maintained). Because of the large amounts of mucus ejected, lavage with salt and bicarbonate of sodium (1 dram of each to 2 pints) was instituted. Whenever it was employed, diminution of vomiting and gain in weight resulted; but, owing to the mother's unwillingness and inability to carry it out, this procedure was used only at infrequent intervals. As the tube usually showed that the stomach was not empty until almost four hours after a feeding, the bottles were given at this interval (six times a day); and the mother was told to postpone the meals, if vomiting occurred at the time they were due. The progress of this baby was slow and painful, beset with relapses and most disappointing losses in weight. Notwithstanding this, the steps were slowly upward; after four months of treatment, the weight was 10 pounds (a gain of 3 pounds). After the buttermilk had been gradually increased to 1 part to 3, it was slowly replaced by fresh buttermilk (with 3 per cent. cane sugar and 1.5 per cent. wheat flour). Every attempt to add whey or cream to the mixture was followed by disaster. At these times only was the vomitus very acid; (usually it contained no free hydrochloric acid, with a total acidity of about 50). When fresh buttermilk was given, the lime-water was replaced by citrate of sodium (1 grain to the ounce); and that this was beneficial, was shown by an increase of vomiting on its withdrawal. To compensate for the small amount of food tolerated by the irritable pylorus, the former was strengthened by somatose and beef-juice (1 to 2 drams), with how much benefit, it is impossible to say. After the eleventh month, the vomiting diminished materially; so that now (thirteen and a half months) several days will often elapse without its occurrence, and the child weighs 14 pounds, has four teeth, and is undoubtedly on the way to complete recovery. At no time was visible gastric peristalsis observed.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Pfaundler and Schlossmann: Handbuch der Kinderheilkunde, ii, 18., 181.

[2] Cautley, E.: Brit. Med. Jour., Oct. 13, 1906, p. 939 et seq

[3] Heubner, O.: Arch. Pediat., July, 1908, p. 555, abst. from Therap. Gegenw., October, 1906, p. 433.

The question as to the diagnosis in this case may be raised. I am sure, however, that it was one of pyloric spasm of extreme and obstinate degree, to which, from a long series of dietetic errors (five months) gastric distention and catarrh had been added. The expulsive vomiting, the early history, and the fecal movements of natural character, are sufficient to exclude simple chronic indigestion and pyloric stenosis. This case illustrates, even more than the first, how persistent and intelligent efforts at feeding will often bring success in the most obstinate instances of this affection. If there had been opportunity to have the infant under closer observation and control, it is possible that the improvement might have been more rapid.

Congenital pyloric spasm and congenital hypertrophic pyloric stenosis, though usually separable clinically, stand in close genetic relationship to each other. Hence, in considering the nature and etiology of pyloric spasm, a brief summary of its symptoms and of those of hypertrophic stenosis will not be out of place. The subjects are usually males. They are born healthy. They are commonly breast-fed. The vomiting begins from the third day to the third week, or later. It is without apparent cause, and may be very acid or entirely unaltered in character, and is often expulsive or projectile, and may exceed the amount taken. There is constipation, obstinate or partial, according to the amount of narrowing or spasm. Signs of indigestion or gastric catarrh are usually absent, at least in the early stages. Exaggerated gastric peristalsis, feeble or intense, from left to right, is almost always sooner or later observed. In the minority of the cases a mass is palpable in the pyloric region. There is rapid loss of flesh, keeping pace with the amount of vomiting. Pain (from spasm) is often present. The food remains in the stomach longer than the usual hour and a half, viz., from two to four hours.

This group of symptoms exists in greater or less degree, according to the nature of the case; whether it be one of pure or partial spasm or of true stenosis, and differs entirely from the habitual or chronic vomiting of infancy, in which there are always the evidences of indigestion, so conspicuously absent in the condition we are considering.

The conception of Koplik as to the relation and nature of the affections variously considered as pyloric spasm and pyloric stenosis seems reasonable and probably correct, namely: that in some of these cases there is simply pyloric spasm alone; that in others there is added to this some hypertrophy of the circular fibers, causing a more or less distinct narrowing of the orifice of the pylorus, but not sufficient materially to narrow its lumen, and permitting of the free passage of food in the absence of spasm; and that in still another variety the narrowing of the pylorus is so great as practically to close the opening, so that an actual stenosis exists. This last group comprises but a minority of the cases and includes those of patients relieved by operation alone.

That there may be a distinct anatomic change in the pylorus, and yet recovery ensue, although the pathologic condition remains, is shown by the case of Batten[4]: this patient exhibited the ordinary symptoms of hypertrophic stenosis and gradually recovered; but, at death, long after, was found to have the usual muscular hypertrophy of the pylorus. I think that the weight of evidence goes to show that in all cases spasm is a prominent and ever-present symptom, and is the cause of the symptoms observed during life; and, as in Batten's case, may and does subside, and yet the hyperplasia of the circular fibers persist. It would seem, also, from the purely clinical standpoint, that a simple spasm of the pylorus may exist without apparent anatomic change; yet it appears more reasonable to assume that in all cases there is some pathologic alteration in the structure of the pylorus, although very slight, which, under certain conditions—the swallowing of liquor amnii,[5] inappropriate food (whether from the breast or artificial), hyperchlorhydria, etc.—causes incoordination of the musculature of the pylorus and adjoining gastric walls, resulting, at last, in spasm. In a word, in cases such as I have reported as instances of simple pyloric spasm, there is underlying, as the primary cause of the spasm, a congenital defect of the circular muscle fibers at the pylorus, or of the nerves innervating them.

The relation, therefore, of the cases clinically recognized as pyloric spasm to those in which a true hypertrophic stenosis exists is simply one of degree. Pfaundler's theory that all cases are due to spasm, and that the changes in the pylorus met at operation or autopsy are always secondary, is certainly not borne out by clinical and microscopic evidence.

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[4] Progressive Medicine, Philadelphia, March, 1903, p. 218.

[5] Thompson, J.: The Clinical Examination and Treatment of Sick Children, Edinburgh and London, Edition 20, 1908, p. 122.

It is not necessary to dwell at length on the diagnosis of congenital pyloric spasm. Although theoretically its differentiation from the severer hypertrophic stenosis is not difficult, it can not be denied that in practice the obstacles may be great. Usually, however, if, in a given case, a normal or fair amount of fecal matter is passed, it may be concluded that the case is one of spasm, or that no great narrowing exists; or it exists in slight degree, and the spasm relaxes sufficiently to permit food enough to pass into the duodenum to nourish the infant adequately.

TREATMENT

The treatment of pyloric spasm is almost entirely dietetic. Drugs have little or no place. Intelligent, persistent and patient dietetic experimenting, as Koplik[6] has so conclusively shown, seems to be the key-note of success. I have seen now five instances of this affection, of which only two are reported at this time, because the others were observed at a period when the condition was not generally recognized—at least, not fully recognized by me. Most of them passed out of my hands; but I know that all the patients ultimately recovered, some of them, without any particular management. Hence, I conclude that the prognosis is good, if the case is largely one of spasm, as so many of them are.

In the feeding of these infants, it is generally taught that the quantity should be small and the intervals short; but, as it seems unreasonable to put food into an organ that has not rid itself of the last meal, I believe a better rule is to feed only when the stomach is known to be empty. This can be discovered by the passage of the tube; or, in lieu of this, by observing the latest period at which vomiting occurs after a meal, and by always postponing the feeding if vomiting takes place just before or at a time when it is due. The amount to be given is that which observation of the case teaches us will not be rejected in any great quantity. In this way, as the irritability of the stomach is gradually overcome, it will be found that larger and larger quantities will be retained. Theoretically, the infant will not gain flesh on the small amounts (only 16 to 20 ounces often) introduced by this or other methods, but practically I have found that it does, because, especially in severe cases, not half or one-third this quantity has been retained.

Breast-milk, given according to the method described, is the ideal food for these infants. If the milk of one wet-nurse does not agree, another should be tried; and, as the fat is generally not well tolerated, in many cases it may be found advisable to remove this by centrifugation. In artificial feeding, a food which is free from curds and irritating properties, and which will form no coagulum in the stomach, should be selected; such a food is whey, to which completely peptonized fat-free milk, and later cream, may be cautiously added. Buttermilk, notwithstanding the hyperacidity often present in these cases, is valuable on account of its low fat-content and the digestibility of its casein, and has been found effective in many. In my cases, a buttermilk conserve was at first employed, because of its easy preparation, and because it had proved to be a successful temporary food in other cases of difficult feeding. It was slowly replaced, in one case, by whey and cream; in the other, by fresh buttermilk. I always gave it well alkalinized (25 to 33 per cent. of lime-water).[7] In breast-fed infants lime-water may be given before, during and after the feeding, either from a spoon or by means of a medicine dropper, introduced between the nipple and lips. This (an alkali) is, I believe, a valuable addition to the dietary of these cases, whether the milk be fresh or acid. The excessive acidity, so often present, is thereby neutralized, the casein rendered more soluble and its coagulation retarded; and, as we know that relaxation of the pylorus is accomplished through the agency of the alkaline juices of the duodenum, it is not unreasonable to assume that alkaline stomach-contents might have a similar action. Citrate of sodium (1 to 2 grains to each ounce of milk, whey or buttermilk) has been recommended. It has the advantage of smallness of bulk, thereby conserving the nutritive value of the mixture given. In my second case, it was substituted for lime-water, when condensed buttermilk was replaced by fresh. That it had value was shown by the increased emesis whenever it was withdrawn. As a rule, fats of all kinds, whether in the form of cream or of olive oil or cod-liver oil, should be avoided. In my cases, they always provoked disturbance.

Stomach-washing is highly recommended by Sutherland,[8] Cautley, Pfaundler and other authors, and condemned by others. In my hands, it has proved a most valuable resource. So successful may it be in allaying the vomiting and spasm that Cautley warns against wrong conclusions which may be drawn therefrom, as to the nature or gravity of a case—whether it be one of true spasm or of organic stenosis. Lavage should be practiced daily, at first; and, later, whenever there is a return or an increase of the vomiting, or when food remains in the stomach from one feeding to another.

I believe that it also has some value as a diagnostic measure. When much spasm is present, the tube is seized and thrown into vibrations by the hypertrophied and irritable stomach, and the water pumped out much more vigorously than under normal conditions. Usually, simple saline water is sufficient; but if there is much mucus, sodium bicarbonate may be added (1 dram to a pint).

Warm applications and poultices, hot salt-bags or water-bags, and Japanese pocket-warmers, applied to the epigastrium at meal time, and for half an hour thereafter, have been advocated, and gave in my cases considerable comfort.

Drugs to overcome the irritability of the pylorus and adjoining gastric walls occupy, in this affection, a very secondary position. Opium has been recommended; but atropin, chloral, and the bromids would appear to be less objectionable, and more likely to afford relief.

Finally, in the treatment of pyloric spasm, we should never despair, remembering, if we are familiar with the history of the affection, that the most hopeless patients may recover entirely under our observation, if we are able to retain them long enough; and that, as in severe and pronounced cases the diagnosis from true organic stenosis is difficult and often impossible, the question of surgical intervention may have to be considered, yet operative measures should always be postponed so long as the infant is not actually and continuously losing weight.

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[6] Koplik, H.: Am. Jour. Med. Sc., June, 1908, p. 1.

[7] Moll (Arch. f. Kinderh., 1905, xlii, 327) asserts that in alkaline buttermilk the proteids are more soluble and finely divided, and that tryptic digestion is easier.

[8] Sutherland, G. A.: Lancet, London, March 16, 1907, p. 725.

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ABSTRACT OF DISCUSSION

Dr. H. M. McClanahan, Omaha: A case I saw began on the third day of life, the child dying on the twenty-ninth day. Postmortem revealed a stenosis; the lumen of the pyloric orifice would barely admit a fine probe. The patient was very weak and gradually lost weight. I was unable to palpate any tumor. The increase in growth was at the expense of the lumen and not at the expense of the size. Now, is there any way by which we can say that one case is a case of pure spasm and another has an element of true stenosis involved? At the postmortem I regretted that surgical intervention had not been resorted to. In another case, in view of this experience, it seemed to me at the time that surgical interference would be justified, but the patient went on to recovery. The peristaltic wave was so distinct that the nurse could see it. The absence of the peristaltic wave might be evidence of the spastic condition.

Dr. D. J. M. Miller, Atlantic City: These infants are always hypersensitive. They start readily, are easily frightened, and should be kept as quiet as possible. For this reason stomach washing is inadvisable in many cases; and the same applies to rectal feedings. My object in presenting this paper was to show that spasm is a predominant symptom in most of the cases and that operation should always be postponed to the latest moment, for many of these infants will improve under patient and careful dietetic treatment. My second case illustrates this, though still much below weight and though the way was long the child is now practically well. Still I believe that in many cases an operation would do no harm and might be beneficial, although not absolutely necessary.

AN INVESTIGATION INTO THE CONDITIONS SURROUNDING THE CHILD IN SCHOOL *

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At the meeting of the American Medical Association of 1907, following a paper on the "School Child," by W C. Hollopeter, it was suggested by A. C. Cotton that there be an investigation of school conditions undertaken by the Section on Diseases of Children. As a result a committee was appointed to investigate the present status of the school child; I was appointed for the middle west.

The intention was to cover the entire country, and the division of territory was made north and south. Early in the investigation it was learned that this division was an impractical one, as the school conditions in localities where there are separate schools for the negro were at such a variance from the average that statistics gathered in these localities were discarded and the investigation limited to cities of 25,000 population and upward in the north central states. The data used in this paper were gathered in thirty-four cities, from 904 schools selected at random, representing 369,290 pupils.

The methods used in the investigation were: first, the use of school statistics published by the various educational boards; second, correspondence with school superintendents, principals, teachers, and school inspectors; third, personal investigation.

The report of the U. S. Commissioner of Education for the year 1907 states that there were 16,829,386 pupils in the common schools; 848,191 pupils in the high or secondary schools at a total cost of $330,680,801, or a cost of $3.90 per capita of population, or a cost per pupil of $41.60 per annum.

In twenty-two of the cities under investigation the pupils were divided in the several grades as follows: first grade 87,783, second grade 61,369, third grade 57,703, fourth grade 54,220, fifth grade 50,489, sixth grade, 41,904, seventh grade 35,223, eighth grade 24,998, first year high school 13,858, second year 9,087, third year 5,572, fourth year 3,699.

The average ages taken at the beginning of the school year were first grade, 6 years 4.5 months; second grade, 7 years 10.5 months; third grade, 9 years 2.6 months; fourth grade, 10 years 4.1 months; fifth grade, 11 years 6.3 months; sixth grade, 12 years 4.3 months; seventh grade, 13 years 4 months; eighth grade, 14 years 1 month.

The variation in the ages between the various grades is not to be taken as indicating the average time spent in the grade, as the factors of non-promotion and the dropping out of the over-age child must be taken into consideration. In the primary grades the non-promotion of a large proportion of the pupils, together with the fact that but few pupils withdraw, causes the lengthened average interval, while in the grammar grades non-promotion is one of the chief causes of the withdrawal of the school child; so with non-promotion and the dropping out of the over-age child the apparent average interval spent in the grade diminishes.

The relation of over-age and non-promotion to the dropping out of the school child is shown in the accompanying table which gives the normal age per grade as used in the calculations of this article, the number and percentage of entire class of normal age pupils, the number and percentage of entire class of pupils over age, the number and percentage of class of pupils under age, with the percentage of promotions in the various grades.

TABLE SHOWING AGES AND PROMOTIONS BY GRADES

Grade.	Normal Age; Years.	Number of Pupils. Normal Age	Percentage of Pupils. Normal Age	Number of Pupils. Over Age	Percentage of Pupils. Over Age	Number of Pupils. Under Age	Percentage of Pupils. Under Age	Percentage of Promotions.
1.	6-7	65,001	88	8,863	12			68
2.	7-8	40,073	71	11,473	20.5	4,910	8.5	82.3
3.	8-9	32,252	61.6	14,346	27.4	5,759	11	85.4
4.	9-10	28,090	59	14,759	31	4,761	10	84.8
5.	10-11	25,153	60.5	12,514	30.1	3,908	9.4	82.5
6.	11-12	19,863	60.7	8,210	25.7	4,450	13.6	83.2
7.	12-13	19,988	64	5,496	22	3,407	14	84
8.	13-14	11,238	61.8	2,880	15.7	4.128	22	88

A uniform series of questions was sent to each of the principals of the 904 schools and a second series to some ten thousand teachers in these schools. The questions and such answers as can be summarized are here given, reduced to percentages for the more ready comparison when possible.

PRINCIPALS' SERIES

How many of your pupils are compelled to leave school each year because of ill health? (This includes only cases of general ill health, excluding all acute and contagious diseases and temporary illnesses). Twenty-one per cent. of the principals answered that none of their pupils were compelled to leave on account of ill health; 11 per cent. gave 1 in 500 as the proportion; 9 per cent., 1 in 250, 17 per cent., 1 in 200; 28 per cent., 1 in 100, 9 per cent., 1 in 50; 4 per cent., 1 in 33. This is an average loss due to general ill health of one in each two hundred pupils.

What is the size of your playground? Nineteen per cent had no school playground; 10 per cent. had less than a square yard per pupil; 7 per cent. had between 10 and 15 square feet per pupil; 15 per cent. had between 15 and 25 square feet per pupil; 6 per cent. had between 25 and 50 square feet per pupil; 18 per cent. had between 50 and 100 square feet per pupil; 25 per cent. had over 100 square feet per pupil.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City June, 1909.

Have you a good system of ventilation—any method insuring fresh air constantly? Twenty-two per cent. answered in the negative; 78 per cent. in the affirmative.

What method of ventilation is used? The answers varied greatly as to the system in use and the major portion of systems mentioned can not be considered adequate. The ventilation of the schoolroom is of such importance that it would seem advisable that this body take some cognizance of the methods of schoolrom ventilation which meet its approval.

Have you a sanitary drinking fountain? This was answered in the affirmative by 27 per cent.; in the negative by 73 per cent.

Do you use individual cups? This was answered in the affirmative by two principals.

Are the school toilets in good condition? This was answered "yes" in 81 per cent. and "no" in 19 per cent., but these answers do not coincide with the result of personal investigation, as in the schools visited the toilet rooms were usually found to be dark and ill ventilated.

The Care of the Rooms.—The rooms were swept daily in 80 per cent. of the schools, tri-weekly in 19 per cent. and bi-weekly in 1 per cent. The rooms were scrubbed once in two weeks in 24 per cent. of the schools, once a month in 21 per cent., once in two months in 3 per cent., three times a year in 37 per cent., twice a year in 11 per cent. and annually in 4 per cent. The school desks were washed twice a month in 7 per cent., monthly in 15 per cent., once in two months in 5 per cent., three times a year in 29 per cent., twice a year in 16 per cent. and annually in 28 per cent. The walls were washed or calcimined each year in 7 per cent., every two years in 19 per cent., every three years in 10 per cent., every four years in 12 per cent., every five years in 14 per cent., every six years in 14 per cent., every seven years in 2 per cent., every eight years in 8 per cent., every ten years in 8 per cent., every fifteen years in 1 per cent., every twenty years in 1 per cent. and never in 4 per cent. In dusting a feather duster was used in 67 per cent. and a damp cloth in 33 per cent.

Text-Books.—In 53 per cent. of the schools free text-books were used entirely. The average life of a book was given as two years in 12 per cent. of the schools, three years in 21 per cent., four years in 29 per cent., five years in 28 per cent., six years in 7 per cent., seven years in 1 per cent., eight years in 2 per cent. In no school was there any means provided for sterilizing the books; and, regardless of the condition of the previous user, the books were passed on to the next pupil without a pretext of asepsis.

TEACHERS' SERIES

Below are summarized the answers to the teachers' questions; for comparison there have been selected the answers from the first and seventh grade teachers, as time will not allow of a more detailed report.

How many pupils in your room?

Number of Pupils in Room.	Per cent. of Answers. 1st Grade.	7th Grade.
15 to 20		2
21 to 25	1	
26 to 30	2	9
31 to 35	8	23
36 to 40	29	25
41 to 45	24	13
46 to 50	18	12
51 to 55	5	2
56 to 60	7	2
61 to 70	6	2
71 to 80	..	2
81 to 90	..	2
91 to 100	..	2

What is the size of your schoolroom? The dimensions of the schoolroom have been reduced to number of square feet per pupil, as in the calculation of air space any height over thirteen feet was not believed to influence the air content of the room.

Number of Sq. Ft. Per Pupil.	Per Cent. of Answers. 1st Grade.	7th Grade.
Less than 10	4	
11 to 15	23	13
16 to 20	39	25
21 to 25	26	40
Over 25	3	22

Have you good playgrounds? Thirty-four per cent. answered "no" and 66 per cent. answered "yes."

How much time does the child have on the playground each day?

Time on Playground.	Per Cent. of Answers. 1st Grade.	7th Grade.
No outdoor recess	8	12
10 minutes	3	6
15 minutes	13	35
25 minutes	10	6
30 minutes	66	41

These are the periods the schedule calls for, but as in no school is there any covered area provided, in stormy and inclement weather the outdoor recess can not be had.

What is the longest period the child is in the schoolroom without an outdoor recess?

Longest School Period.	Per Cent. of Answers. 1st Grade.	7th Grade.
60 to 90 minutes	50	34
90 to 120 minutes	38	48
120 to 150 minutes	5	6
150 to 210 minutes	7	12

How many of your pupils must do home work to keep up with their classes? In the first grade 7 per cent. of the teachers required some home work, while in the seventh grade home work was required by 82 per cent. of the teachers.

How many of your pupils show a marked lowering of vitality or loss of vigor or a noticeable increase of nervous irritability during the school year? Forty per cent. of the teachers failed to recognize these conditions in any of the pupils, while 60 per cent. recognized it in one or more of their pupils. In the minds of the teachers the contributing causes of this condition of stress were:

Causes of Strain.	Per Cent. of Answers. 1st Grade.	7th Grade.
Too much school work required..........	78	22
Too great anxiety over grades or examinations	8	32
Too many outside cares, as the care of younger children or employment for economic purposes	14	24
Outside social distractions................	12	30
Poorly cooked or innutritious or insufficient food	42	12
Habits contracted outside the school, as cigaret-smoking, exciting companionship or bad personal habits.................	12	44

On the principals' series of questions the question, "What in your opinion are the chief causes of stress and strain in the school child?" was answered by the majority to the effect that there appeared no stress or strain in the children under their observation. Of the others answering the question each hundred principals gave the following:

Too much school work required.............	30
Too long school hours.....................	9
Poor preparation in the earlier grades.......	12
Insanitary school conditions................	9
Too many pupils in a room..................	8
Too much importance attached to examinations	5
Yearly promotions and the lockstep method...	6
Poor teachers..............................	4
Improper school seats......................	2
Outside work, as selling papers, ushering in theaters and care of young children........	14
Outside work, as music and dancing lessons...	4
Overambitious parents......................	11
Poor home environment......................	27
Children improperly clad...................	9
Children improperly fed....................	23
Insufficient sleep.........................	15
Social distractions and cheap theaters........	23
Mental insufficiency.......................	26
Lack of home discipline....................	9
Irresponsibility	6
Irregular attendance.......................	6
Physical defects...........................	9
Bad personal habits........................	15
Too much stress attached to the special studies	6

The schedules are apparently arranged with but two ideas in mind—to have the harder studies early in the session and to fit in with recesses.

Sample schedules taken at random from various school systems were found to have the same lesson periods for all the grades, no attention being paid to the physiologic fact that a child six to ten years of age can not apply the attention to a specific subject for more than fifteen minutes without undue strain. In many schools the first lesson period, which supposedly is of the hardest study, is forty minutes in length in the primary grade.

The curriculum is manifestly overcrowded. This is due to three causes: first, the domination by the colleges; second, the fact that all that has been in the curriculum at any period must remain; third, that every pupil must take all the work, regardless of personal need.

This overcrowding of the curriculum is the source of much of the criticism which is being heaped on all public school systems, and is a menace to the child in two diverse ways: first, the honest ambitious child must do more than is within the limits of his ability to do without physiologic impairment, and, second—and what is of far greater evil in its effect—is the fact that educators recognize this factor and the child himself soon learns that to do all his work well is unnecessary for promotion, and here is inoculated into him those habits of shiftlessness and irresponsibility that are the crying evil of the modern school. Through all the literature and remarks of educators one recognizes this constant wail of the inability of the school to develop the will, but all effort is placed on the intellectual capacity. The school does not educate (draw out), but rather its apparent endeavor is to pour into the child a certain definite number of facts.

There are now at work several agencies looking to the simplification of the curriculum. A committee appointed by the National Educational Association is doing a valuable work.

To sum up: It is self-evident that inefficiency exists in the working out of the educational method for the child in all departments.

To suggest improvements in the several very urgently needed reforms would take more time than is allotted for this paper. What would be of far-reaching good is the establishment of an educational health board connected with each school system, this board to be composed of physicians, with proper authority to act in safeguarding the health of the school child, and to be the final arbiter in regard to hygiene and sanitation, and to indicate the mental and physical ability of the pupil.

THE SCHOOL CHILD'S BREAKFAST*

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To physicians deeply interested in the work of preventive, as well as curative medicine, the school child's breakfast is becoming an important factor for earnest consideration. The subject, however, is not a new one. For many years harrowing stories have reached us from over the ocean of the distressing poverty of English and French cities. Reports have come to us of thousands of children who are sent to school weak from hunger. The expensive educational system provided for the children weakened by privation and hunger in their poor homes evidently has failed to impress or benefit them to any degree. Our government, as well as the governments of several European countries, has debated and framed, year after year, various laws for the correction of the school child's condition; yet very little good in this special direction has crystallized out of the many voluminous "acts to amend an act" before the various legislative bodies. It is much more convenient for us to read, and even to reread, these many reports of the distress of the foreign child and eventually come to believe them than to investigate patiently the truth for ourselves.

The best framed legislative measures reach us from Great Britain. The British people have indulged, frequently and thoroughly, in debate on the underfed school child. It is a matter most vital to them. In April, 1905, Sir John Gorst, possessing an advanced mind, full of theories, yet lacking practical application, instituted a most appropriate comparison of the government of the people described by the Apostle as "ever learning and never able to come to the knowledge of the truth." As he states, they are always appointing royal commissions and departmental committees on social questions, but most frequently fail to carry out their many recommendations. He is found stating his case in this language: "It is true our committees found themselves unable to say whether the school child was better nourished or developed now than forty years ago, for the course of study imposed now is much more exacting than formerly. But it is a fact that the child is much better physically now, and more able to endure indoor work, so the committee felt, inasmuch as the material was better, it was desirable to demand more of the child." Another British report quoted by Sir John Gorst insists that all school children should be inspected more thoroughly, physically and mentally, and examined as to all the senses, and finally, measured and weighed semi-annually. In this way the country might learn the true facts of the child's condition—if improving or deteriorating.

While reading of our British cousins and feeling a national pride that our own country does not allow a school child thus to suffer and deteriorate, our natural complacency was given a rather rude shock by the publication of an article by that sociologic writer, Mr. Robert Hunter, implying that our country was no better than Great Britain or France, and estimating that in New York City alone 70,000 children went to school hungry. The exact number was, moreover, distressing, inasmuch as a definite number carried conviction in regard to the actual facts tabulated in so large a number. For 70,000 children to go to school hungry seemed appalling, and this occurred just during the most prosperous period of our country. The exact facts seemed more like an importation of statistics from the literature of a foreign revolutionary agitator. It did not seem to belong to our country or our investigations. The true statement made by Mr. Hunter was that 70,000 children were found in New York schools underfed, and the latter word would have expressed the real meaning of the original statement more clearly than the word hungry. Many thousands of little children go breakfastless to school at times; but the real problem is much more extensive than that, and embraces that much more numerous class of children who are chronically underfed, either because their food is insufficient in quantity, or, what is the same thing in the end, poor in quality and lacking in nutriment. Furthermore we read from John Spargo's "Bitter Cry of the Children" that from cases personally examined by himself, or by teachers acting under suggestions given by him, he found that of 12,800 children 2,950, or more than 23 per cent., either had, on the morning examined, no breakfast or a miserably inadequate breakfast of bread, crullers or crackers, with or without coffee or tea. He has also summed up the result of other investigations made in New York City, Philadelphia, Buffalo and Chicago, which show that of 40,746 children 14,121, or 34.65 per cent., had gone to school breakfastless, or with nothing more than bread with tea or coffee—certainly a very poor preparation for the day's work.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

The animated discussion on the question of underfed school children which has been going on for the past four or five years, both at home and abroad, has found its way into the newspapers, chiefly through the reports of sanitary inspectors. These published statements are based on insufficient grounds. The final analysis will prove that poverty, or the want of food, is not the real cause. The child does not usually want the food in the morning. It is absurd for the excited social reformer to demand, on such slight grounds, the supplying of free meals. It is true, indeed, in every large city there are many children who go hungry to school and go because there is an actual lack of food for them. This condition is, fortunately, not common in our own country. This class of school children should be cared for by the proper charitable agencies and never by school authorities.

Viewing the question from a medical standpoint, poverty is not the cause, except in a small minority of the cases, of those school children who go hungry. All physicians, especially those dealing largely with children, note the capricious morning appetites of children who are physically below normal from any one of many causes—such as ill health, poor homes, careless personal hygiene, etc.—and this is most likely to occur with those living in city slums and crowded quarters. Any physician doing dispensary work will recognize the truth of this assertion.

For several years I have been deeply interested in the child's breakfast, and I have made careful investigation along this line to learn the actual truth. A large proportion of the children, if asked why they did not have breakfast, would quickly reply that they did not want it; or, if in the younger children, the answer would be that their mothers could not make them take any. The true answer must be sought farther back than the mere lack of food, for food is frequently abundant. The true cause is generally the personal or domiciliary hygiene of the poorer classes extending throughout several generations. Careless mother, unclean bedrooms, close and badly ventilated, late retiring hours, with heavy, unsuitable dinners, a strong disinclination for the morning bath—all tend to cause neglect of the morning meal; then the child is hurried off to school with little attention to his personal comfort in many ways, besides omitting the breakfast.

It is not among the poorer classes alone that we find the capricious morning appetite. The fault is found just as frequently among the children of the better classes. This condition prevails in a more pronounced form—the personal environment is forced and unnatural. The practice of allowing young children tea and coffee, various stimulants, the rich, late, evening meals, associated with the excitement of music and visitors until the early sleeping hours have been broken, are all active factors in producing unstable appetites. These conditions and many more could be mentioned which must be taken into account when seeking a remedy for the growing evil. Little good can be accomplished in spending public money for free meals for children who do not want to eat and can not eat in the early morning, handicapped as they are with these many difficulties.

With the object of corroborating or disproving the correctness of Robert Hunter's and John Spargo's statements of the school child's breakfast, I enlisted the services during the winter of about 100 teachers in the elementary schools and emphasized the importance of their method of questioning the young child. I insisted that the following three questions be asked: 1. Do you eat a breakfast? 2. What do you eat? 3. How long does it take you to eat? The importance of truthfulness in our answers would rest in the manner of the teacher's approach to the child. She must ask each child alone and in strict confidence; the child must not know he was about to be questioned, otherwise the answer would be prompted by his pride or his mother's suggestion—that is one reason why the answers collected by John Spargo are misleading.

The result of my winter's work is very briefly summarized as follows:

Of 2,169 children interrogated:

58 per cent. drank coffee
15 per cent. drank milk
11 per cent. drank cocoa
11 per cent. drank tea
68 per cent. ate bread
4 per cent. ate rolls
40 per cent. ate eggs
35 per cent. ate a cereal
5 per cent. ate potatoes
18 per cent. ate cakes
9 per cent. ate meat
9 per cent. ate fruit
6 per cent. ate various other foods

Only six claimed to eat no breakfast; 737 gave the time consumed in eating as follows:

2, 50 minutes
5, 45 minutes
3, 35 minutes
74, 30 minutes
27, 25 minutes
128, 20 minutes
221, 15 minutes
1, 13 minutes
2, 12 minutes
135, 10 minutes
1, 8 minutes
31, 5 minutes
3, 5 minutes
2, 2 minutes
2, 1 minute

In conclusion, while we can not draw a definite result from the analysis of so small a number of school children (2,169) as to the quantity and quality of food taken for their breakfasts, we may infer that the school child has a chance—a poor one, indeed—for a breakfast; and the reason he has so poor a one is not that he has no food, but unfortunate surroundings to prepare him for his day's work.

Our duty as physicians is to regard our professional relation not ended with the school child until definite instructions be given to the family in correcting the poor home surroundings of the child as to sleeping rooms, personal habits, as well as proper food at a given time.

It is quite evident that Mr. John Spargo's estimate of hungry school children is erroneous and misleading. This is due to the manner of his gathering his information, obtaining it collectively when every element of personal and family pride was placed on view.

1411 Spruce Street.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. HOLLOPETER AND VAN DERSLICE

Dr. L. T. Royster, Norfolk: I am acting head of the school board in a city of 70,000 inhabitants, about 60 per cent. of the school population being in the schools. We have about 15,000 negroes in our schools, but these schools, of course, are separate.

The school authorities are the first ones to be educated in this matter. It is absolutely essential that on every educational board there be a physician; I never realized the need of that until I got on the school board myself and found that what little I could do was absolutely needed by those gentlemen, all good men but not knowing what was needed from a physical standpoint. First of all, the physical and moral development should be ahead of the intellectual. Our public school system should fit the child for the battle of life, and that is not done without a physical and moral foundation. Of first importance is sanitation. When children are educated in the proper care of their physical being, not only will they be benefited, but the next generation will receive the benefit of this education. These children will in the next generation be the legislators as well as the educators. If the Lord's prayer is taught a child at its mother's knee, that child will never forget it. It may come to feel that it does not need it, but if the occasion arises it will remember its early teaching. This is equally true of other teaching. If a child is taught that his welfare depends on physical and moral hygiene, the foundations are laid for the good of the race.

Questions come up as to whether a midday lunch is preferable or whether the child should continue his work and go home for a 3 o'clock dinner. All these questions come up from time to time, and it seems this body should go on record and let it be known that the American Medical Association stands for certain principles that are essentials in public school education. That must have some weight eventually. We must keep these facts before the public every day and every month and every year. Another thing, we are the men who influence the people in their homes. The family physician is the one who tells the mother that the child must do this, that, or the other. Mothers will do what we tell them, even if they come into conflict with the public school system. We are the missionaries. Now it seems to be a belief that anything ever put into the curriculum should never be taken out. I am a believer in two fundamental things in the teaching of children, *i. e.*, moral training and physical education. No man is educated until his moral nature is trained and from physical training you get a power of coordination and also of relaxation. Make the public feel that we are the arbiters of the situation. It is our duty to humanity to keep constantly knocking at the public door.

Dr. **Charles Douglas**, Detroit: It seems to me that this is perhaps the most important subject we could undertake in order to educate the public. Professionally we are coming in contact with the results of intense ignorance among the so-called better educated women in this country. Our work is largely to repair the damages that are the result of their ignorance. We are continually called on to correct evils among the little ones that are the result of the ignorance of the mothers who have followed the advice of some ignorant mother or grandmother. I contend that we must do all that has been said and we must go further. In every woman's college curriculum there ougnt to be a course educating our young women to know what is right and what is wrong in hygiene and dietetics, so that in after years when feeding their children they will not be dependent on some ignorant old woman for directions. We know that in the first week of a child's life damage is often done that will send the child to its grave. We should force the public to recognize that the schools are not doing their whole duty. Is it necessary to teach so much of what we all forget? Is it not better to teach young women something they will need? We should teach them what foods agree, what are the elements in food for proper nutrition and how to use the foods. If they have enough of this knowledge they won't be subjects for education by people more ignorant than themselves. Only then will we have a higher status of education than we have now.

Dr. **George F. Little**, Brooklyn: I agree that we ought to make public such action as we may take. We won't go far by merely talking this over among ourselves. This committee will report from year to year and I think they should make recommendations to be acted on by this body. I would suggest that the committee get together this afternoon and make such definite recommendations as the report may call for; that the section act on the resolutions submitted and that they be given wide publicity.

Dr. **C. G. Kerley**, New York: When I was chairman of this Section I read a paper on this subject, and a year ago I read a similar paper before the American Pediatric Society. I think we are going a little too fast. It is all right to take the matter before the public, but the first one we have to educate is the physician. The physician must realize that he has something to do besides studying pathology and therapeutics and practicing medicine. We know something that the public ought to know. We recognize this fact we come here and discuss and then we go away and the public knows just about as much through our knowledge as it did before. What physicians must recognize first is that they are, in a sense, teachers. Where does the public get its information on the subject of health and disease? From "patent-medicine" and proprietary-medicine manufacturers. How is the mother to know how to feed her child properly or how is the father to know how to eat in order to nourish his body to enable him to work, if he has never been taught? Ninety per cent. of the population eat simply to satisfy the appetite. What we must do is to teach the people how to live. Physicians must appreciate their duty to the community and then they will be able to act to a tremendous advantage for good. Instruction in vital living principles should be taught in the schools. Every large town should have a board of hygiene associated with the board of education, but to have that brought about the people must know that we have something that they need that should be brought before them.

Dr. Van Derslice tells us of the ignorance and of the neglect of children, showing that they do not have the care that the farmer gives his horses and his sheep because the child has no value in dollars and cents. The neglect of children, particularly in our larger cities, is a disgrace to our country.

Dr. **Helen C. Putnam**, Providence: The first thing to do is to educate physicians. The teaching of hygiene in recent years has grown to what may be called a specialty. Several speakers in another section discussed hygiene taught by textbooks; but our leading educators and some physicians are far ahead of that idea. Object lessons and training in habits is the most efficient method. A child can learn more hygiene in two days from a good tuberculosis school exhibit than in two years by memorizing a text-book on bad air and unclean room. The making of housewives has been mentioned. Housekeeping to-day requires scientific knowledge. Domestic science when well taught is by far the best hygiene taught in the schools, and children take it home to their mothers. Boston has exceptionally good instruction in this department, and exceptionally good health reports. School nurses are among our effective instructors. We need higher standards for medical inspection—physicians trained for it. I do not know whether one of the speakers meant to endorse the individual drinking cup in school. Theoretically he might. Experience, however, shows it to be no improvement on the common cup. Children keep it in a dirty desk, or hanging in dusty air, or wrapped in a grimy handkerchief, and lend it to their cupless friends. What morals and manners if they did not! Its details are additional burdens to teachers, parents and child. We should advocate instead the bubble fountain. School fatigue is being specially studied in laboratories. This school cachexia is largely due to lack of outdoor air. Physicians should advocate education through industrial training, outdoor games and school gardens, to introduce the open-air life. Nature study (school gardens, etc.) is the normal method of teaching the origin of new life, which it is our duty to promote. The national organization of biologists is beginning definitely the consideration of its mission in this respect, and we should cooperate in all possible ways.

Dr. **H. I. Bowditch**, Boston: As a younger member of the profession, I think we have neglected one class of students who should be thought of. When I was in college nothing was taught of our responsibility to the public. In the early years it used to be taught, but not now. We used to get an occasional lecture on ethics and the relation of the physician to the public. If the students realized their relation to the public, and what ought to be taught the public, physicians would have a better knowledge of what they have to come up against.

Dr. E. C. Hackett, Chicago: When Dr. Putnam spoke of the work of the biological society, it seemed to me a crying shame that a brother or sister profession should take up the work that physicians ought to be doing. I want to urge that the medical men and medical women in small towns are over-modest. This teaching of others will not be done unless physicians do it. I know the difficulty there is in small towns in getting accurate information on these subjects. One woman physician told me that she had had the temerity to speak in her small town on the subject of reproduction and the matter of abortion, and for speaking of such "unladylike things" she had been tabooed. We will have to come forward and show the public that the American Medical Association is behind this movement if we expect to accomplish anything.

Dr. W. C. Hollopeter, Philadelphia: My sole object in writing this paper was the attempt to go farther back than the mere want of food, and consider the general environments of the child. Much harm has been done by the sentimental writings of the sociologist in the matter of the school child's food, and especially the breakfasts, and this investigation was made to fix the facts more definitely before the profession. If I have satisfied any members of this Section that we need greater hygienic home care of the child rather than increase of food, the object of the paper will be accomplished.

Dr. J. W. Van Derslice, Oak Park, Ill.: I believe that the medical profession needs educating, but I don't know any place where physicians can go to get any sane ideas on the subject. I have worked on this committee for two years and there are very few points on which I am definitely fixed. I think this Section should take a definite stand on subjects we deliberately take up; any subject we take up must be sanely handled. I do not want anything to go out from this Section as a resolution that can be turned down as impractical. There are too many fads and hobbies; what the public wants is facts and practical ideas taken from authoritative sources.

River Pollution and the Hudson-Fulton Celebration.—A discordant note in the Hudson-Fulton glorification, says the New York *Christian Advocate*, comes from a man whose life-span almost bridges the hundred years since the Clermont made her first trip—the Hon. John Bigelow, who was born on the banks of the Hudson ninety-two years ago and has always lived beside it except when residing in Paris as consul, or minister. Mr. Bigelow opens his heart to the public in a letter to the Hudson-Fulton Commission, in which he makes the shades of the discoverer and steamboat pioneer say:

> The river you are making such an ado about discovering and navigating is not the river either of us saw. The river we know and which bears one of our names consisted of as pure and delicious water as ever descended from heaven. You have permitted it to be converted into a great sewer into which all the cesspools, barnyards, kitchens, mills and factories between New York and Troy discharge all their polluting exuviæ and rubbish, instead of sending them back on the lands whence it came and which it should enrich. In doing this you have deprived all the river counties of one of their most valuable crops. That river in our time used to swarm with shad, herring, sturgeon, striped bass, bullheads, sunfish and pan fish of many other varieties. These fish used in our times and for many years after continued to furnish at least one-third of the nourishment of all the inhabitants for ten miles back on both sides of the river from New York to Albany. If you wish to honor us for what we have done to render this magnificent waterway useful, restore it to the condition in which we left it and when it was ready to appease the hunger and thirst of millions of people. Instead of that you have not given a thought or appropriated a penny for the discharge of the first duty which our names should have prompted you to discharge.

It is perhaps too late to save the majestic Hudson from pollution, but there are still in the more recently settled parts of our country streams which nothing but immediate and vigorous action can save from similar or worse pollution. That lavish waste of natural resources which has leveled the forests of America is defiling lakes and rivers with offal which ought to be returned to the soil.

FINAL WORD ON THE STEM PESSARY FOR AMENORRHEA, DYSMENORRHEA, STERILITY, ETC. [*]

J. H. CARSTENS, M.D.
DETROIT

The many inquiries I receive from all over the country about the use of the stem pessary, with requests for reprints of previous articles on the subject,[1] have prompted me to write another article on this question. It shows that the conditions mentioned in the title are difficult to treat. Knowing that the stem pessary will relieve the patients in nearly all cases, and in order to give this method of treatment thorough publicity, I again write on the above-named subject.

AMENORRHEA

This we generally divided into two classes, the one existing in young women in whom menstruation never made its appearance, and the other in patients in whom it has been established for a shorter or greater length of time and has suddenly or gradually disappeared.

Although there are great individual variations, large statistics in different countries show that the age of the first appearance of menstruation is about the same in the white race, viz., between the fourteenth and fifteenth year. The common people understand this perfectly, and if a young girl does not menstruate at about fifteen the mother begins to worry and perhaps treats her or consults a physician. We now well know that in some cases there is no need for treatment of any kind. The patient is backward in development, is perhaps anemic, chlorotic, suffers from indigestion, or has other conditions which generally retard the growth of the pelvic organs. With our rapid development and high education, in many young girls the vital energy is used up with study, and the menstrual function is slow in making its appearance. On the establishment of ordinary rules of hygiene and appropriate treatment such patients become stronger in the course of a year or two and the menstrual function makes its appearance without trouble.

But there are other cases in which no cause for the tardy appearance can be found, but the patients have symptoms of pain and distress recurring monthly. In such cases all the long list of emmenagogues which have been handed down to us for ages are of no avail. I have tried them faithfully and never saw any benefit from them whatever. I am by no means a therapeutic nihilist. Such patients need a thorough examination of the genital organs. There is no use wasting time with all kinds of treatment. These patients must be examined under an anesthetic. If there is an imperforate hymen, atresia of the vagina, or absence or defect of any of the organs of generation, proper surgical treatment must be instituted. These abnormal conditions do not concern us to-day.

Frequently we shall find that the uterus is small, a great deal smaller than it should be; sometimes it is bent. We have a so-called infantile uterus. Sometimes the whole uterus is small, only two inches in length. At other times it is of normal length, but is very thin. In some cases the body of the uterus seems poorly developed and in other cases it is the cervix. It may be the normal length, but only as thick as a lead-pencil.

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[*] Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixtieth Annual Session, held at *Atlantic City*, June, 1909.

[1] Carstens, J. H.: The Stem Pessary for Amenorrhea and Dysmenorrhea, The Journal A. M. A., Dec. 29, 1906, xlvii, 2133; Infantile Uterus, etc., Am. Jour. Obst., 1903, No. 5; The Stem Pessary for Dysmenorrhea, Ann. Gynec., December, 1904.

This poorly developed condition is sometimes due to poor hygiene, improper method of living, too much mental work and too little physical exercise, resulting in a poor development of the whole body. In other cases the patient is physically well developed, but only the pelvic organs seem to be retarded. Now with this kind of cases I formerly had a great deal of trouble. I used applications, tampons, douches, and applied electricity until I got tired of it. I then began to use a small steel dilator like the Notts. By gradual dilatation two or three times a week I would develop some of these uteri to about normal size. It was painful, however, and would take months—yes, even years. Twenty-six years ago in an article I called attention to this method of treatment for amenorrhea and dysmenorrhea.

A good many years ago I read an article on the value of a string of beads introduced into the uterus for the purpose of bringing on a more profuse flow in scanty menstruation. The introduction of a foreign substance into the uterus struck me as a reasonable procedure. I then thought of the stem pessary as a possible means of relieving this condition and began to use it. I found so much benefit that I increased the indications for its use ever since.

PREMATURE ATROPHY

Then there is another class of cases in which menstruation has been regular and normal for years, but when the women are 30 or 35 years old it becomes scanty and skips and is painful. This condition you will find in women who are unmarried and take little physical exercises, but are hard workers mentally, teachers and others who hold positions of responsibility requiring a great deal of mental work. On account of non-use the uterus undergoes a premature atrophy, and on examination the uterus will be found small, like the infantile uterus above mentioned. In such cases wonderful improvement on the insertion of a stem pessary, allowing it to remain for a year or two. To this class may be added that class of superinvolution of the uterus following confinement or miscarriage. Generally the same symptoms are produced as are found in the small uterus at puberty.

AMENORRHEA IN FLESHY STERILE WOMEN

Then there is a third class of cases. Women who live high, have good digestion and are hearty eaters become fleshy; the menstruation becomes scant and sometimes disappears entirely, and the women become sterile and develop all kind of nervous symptoms. I never saw any medicine give benefit in such cases, but by the insertion of a stem pessary and by control of the method of living wonderful benefits to the symptoms and reduction of fat can be brought about.

DYSMENORRHEA

This is one of the most intractable conditions to manage. In the past many normal ovaries have been removed as a last resort in such conditions. Some women suffer pain so that they are laid up every month for a day or two or even more. If they have positions they lose them, as nobody wants the young woman who is incapacited for work every little while. Many drug habits are started on account of painful menstruation. All the remedies, local or internal, that have been used and recommended give but little relief, except some kind of narcotic; hence we can readily see how necessary it is to find some means to permanently relieve this condition.

Authors have divided dysmenorrhea into different varieties, such as obstructive, inflammatory or congestive, membranous, and ovarian. We must, first of all, see that the pelvic organs are in normal condition, and if there is partial atresia it must be remedied by forcible dilatation, etc. But this recurs in the course of a couple of months and the operation has to be repeated. To prevent the recontraction I always insert the stem pessary after forcible dilatation. In cases of membranous dysmenorrhea I thoroughly curette the uterus and swab it out with pure phenol, insert the stem, and cure the patient. The so-called congestion and inflammatory conditions usually mean diseases of the tubes or pelvic peritonitis, and so on, and these require special surgical operations. The stem pessary is not only not indicated, but is liable to light up a dormant case and cause serious consequences.

The stem pessary is indicated in those obscure cases in which we can not lay our fingers on any particular abnormal condition—the kind that used to be called neuralgic; no general defect is found, no inflammatory condition, no displacement, or anything else, simply pain during menstruation. And let me add to this that other peculiar pain occurring just between the menstrual periods which the Germans call *Mittelschmerz*, the pathology of which we do not understand. It is marvelous what beneficial results are obtained in all such cases from the stem pessary.

DISPLACEMENTS

Originally the stem pessaries were devised to keep the uterus in about the normal position. Some stem pessaries were a combination of a retroversion or anteflexion and a stem pessary, all in one piece and difficult to introduce. Others were made of zinc and copper, supposed to have an electric action. But all kinds of stem pessaries were soon discarded because they caused trouble. In the course of my experience I found that in some cases in which there was a reflection or version besides the other conditions requiring the use of the stem pessary, the latter often helped the displacement if worn long enough. As the general health of the patient improves, the ligaments regain their original tone. But the pessary must be worn at least a year or more.

STERILITY

Many of the conditions requiring the use of the stem pessary are also the cause of sterility. I had that impressed on me by some of my earlier cases. A woman, married five or more years, who had suffered from some of the above-mentioned conditions, became pregnant after removal of the stem, which she had worn for three months. This gave me another indication for the use of the stem; and, in fact, some of my patients were kind enough to call the attention of sterile patients to the fact that they had been relieved by the stem pessary and sent them to me, so that in the course of time I have had several patients who afterward became pregnant, although I never promise to relieve that condition. There is nothing lost in trying the pessary, even if it fails. Sterility is sometimes caused by poorly developed mucous membrane of the uterus and the presence of a foreign substance in the uterus, I think, will strengthen and develop the lining membrane.

CONTRAINDICATIONS

Velpeau, in 1840, was the first, I think, to urge the use of the stem pessary. Others took it up, especially Simpson. Different kinds and shapes were devised. But in those days the pessary was used for displacements principally, and, as many of the displacements were the result or coincidence with pelvic troubles, pus tubes, etc., it can now be readily seen how serious results followed their use. Dormant pelvic inflammations were relit; in fact, septic micro-organisms were sometimes introduced in the uterus and persons otherwise previously healthy soon developed pelvic trouble, so that in the course of time the profession tabooed the use of the stem pessary. It is well known that, though repeated efforts were made to re-establish their use, they soon fell into disuse again, and very justly, as they were not properly used and counter-indications not well established. Dysmenorrhea was frequently caused by pelvic inflammations of various kinds and a careless physician might use a stem pessary in such a case with disastrous results. These cases require surgical interference of entirely another kind. Versions and flexions with adhesions require different treatment. A movable displacement requires an Alexander operation or something of that kind. The stem pessary is indicated only when there is no septic or inflammatory condition in the pelvis.

Such conditions must be rigidly excluded; hence it is readily seen that the principal indication for the use of the stem is in young or unmarried women. I have had a few cases in which the stem would not be tolerated and had to be removed. In some the pessaries came half out, as the result of falls from a swing or a bicycle, and had to be removed and reinserted. Hence I want to warn the profession not to use the stem indiscriminately and again bring it into bad repute. Judiciously used, it will be a valuable aid in the treatment of these otherwise intractable cases.

TECHNIC

The introduction of the stem requires dilatation of the uterus. As this is very painful, it is necessary to give an anesthetic, although it may take only five minutes. Then the absolutely cleaning of the vagina is necessary.

I use the Chambers hard rubber stem, although others may be as good. That everything be aseptic I boil the stem with the instruments, but, as the two arms of the stem come together while boiling, I immediately, when taking them out of the hot water, separate them and dip them in cold water so that they will stay open. Generally I have the patient on the back; with vulsellum forceps I catch a lip of the uterus, pulling it down somewhat and straighten it out as much as possible. I now insert a sound to get the exact length of the uterine cavity. Then I select a pessary a little shorter (¼ or ⅓ inch) and have it ready for insertion by fixing it into the introducer. Now I dilate the uterus. As this is often small it is necessary to start with a fine-pointed dilator. I use the Notts dilator. This generally is not sufficient and I then use the Goodell-Erlanger dilator or any other kind, thoroughly opening the uterus. If there should be any endometritis or discharge from the cervix I thoroughly curette the cervix only and swab it out with pure phenol, wiping it dry. I can then insert the stem. The button at the end must be on the cervix. The stem is kept in place by a finger on the button; then the introducer is pulled out and the thing is done. If indicated, a Thomas-Hodge pessary is inserted. The physician must see that the button is in the center of the retroversion pessary. There may be a little blood lost from the dilatation; therefore, I give phenolized douches twice a day for a day or two while the patient remains in bed. Some can get up the next day, but, as a rule, I keep them in bed for forty-eight hours. Then they can get up and go about their usual vocations. They can do anything and everything, as they always did, and never know that they are wearing stem pessaries. Once in a great while in women who are very constipated the pessaries may be forced out by straining. This sometimes also occurs in cases of relaxed vaginas. In the latter the soft rubber inflated pessary will often help to retain the stem in place.

All I ask of the members of this Section is to give the stem a fair trial in those properly selected cases in which ordinary treatment has failed and let us hear the results.

620 Woodward Avenue.

ABSTRACT OF DISCUSSION

Dr. Howard A. Kelly, Baltimore: I think it would be interesting if the members would give their experience. I supposed that the old-fashioned method of using a pessary had been discarded a generation ago. I practically never use internal appliances for any cause whatever, that is, extending over any period of time. I have never used a stem pessary. I don't see just what good it can do. I have seen a great deal of harm result from the use of pessaries, and therefore, I have not used them.

Dr. H. P. Jack, Canisteo, N. Y.: Often the uterus will either raise children or raise something else. We often see in women engaged in mental work the most severe suffering from dysmenorrhea and scanty menstruation. I have in mind a woman who, in spite of the most careful treatment, had become a nervous wreck and who had not menstruated for eight months. Following the method of Dr. Carstens, I used a stem pessary and since that time she has menstruated, not profusely, but regularly. She has developed from a nervous wreck to a healthy, robust, well-feeling young woman. I could report several other cases in which the results have been equally striking, in which women have been transformed, so to speak, from invalids to healthy capable persons.

Dr. A. E. Benjamin, Minneapolis: I have been using the Outerbridge speculum instead of the stem pessary, although I have used Dr. Carstens' stem pessary in several cases and must report good results in some of them. We must be sure that a case of amenorrhea is due to a lack of development of the uterus or of the ovaries. Dr. Carstens has thrown out a few suggestions in regard to the use of the pessary, but we must be absolutely sure that there is not an undeveloped condition of the adnexa, particularly of the ovary. I have seen a number of cases in which a fibrocystic degeneration was taking place; and it must be remembered that amenorrhea will occur on that account. In some of these cases laparotomy was done, the ovaries were resected, cysts removed and menstruation and pregnancy have followed. In cases of dysmenorrhea I have used the Outerbridge speculum introduced just previous to the menstrual flow. Its spring-like action keeps the cervix open. It is one of the best instruments we can use at that time. Also in dysmenorrhea we must be sure that the difficulty is not due to some condition outside of the uterus, that is, in the pelvis. For sterility the same instrument can be used. A few cases I can report in which pregnancy occurred by the use of the Outerbridge speculum, but in most cases I think that Dr. Carstens' stem pessary can be used with greater satisfaction. I believe with Dr. Kelly that nothing should be introduced into the uterus to be left there for any length of time. But when one can restore the function of the uterus and produce a more normal mental state by the use of some of these things, I think their employment is justified.

Dr. J. H. Carstens, Detroit: How can any one judge of a thing he has never used. Thirty or forty years ago it was a serious matter to use these pessaries; they were inserted and severe inflammation was the result. To-day we see great benefit resulting from their use. I have women traveling all over the world wearing these stem pessaries, and able to do all kinds of work.

OPACITIES OF THE CORNEA

THEIR FREQUENCY IN CHILDHOOD FROM PREVENTABLE CAUSES AND THEIR EFFECT ON VISION *

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NEW YORK.

Ophthalmology has been regarded as a field not distinct from general medicine, but comprising problems such as refraction and special surgery, which require so thorough a training as to deter the practitioner of medicine. It is obvious that this attitude is deplorable, as it tends to make the specialist in reality narrow as well as to deprive the practitioner of information at first hand which is often of great value.

The ophthalmoscope has become an instrument of precision in the hands of every careful diagnostician. Gower's "Medical Ophthalmoscopy," the excellent translations of Haab's atlases, and articles by Bull, de Schweinitz, Duane, Knapp, and Risley, who has drawn attention to the importance of hygiene in the care of the eyes of school children—these writings and many others have awakened an interest in ocular problems, and the questions which this paper will raise will, it is hoped, justify its presentation before a society which welcomes all information relating to the welfare of children.

In the excellent address of the Chairman, stress has been put on the importance of foresight. In the care of children, as in no other field of medicine, conditions of nutrition and of the inheritance of a disposition to disease must be anticipated and controlled before the precious moment has passed and the tendency becomes disease.

Some of the special problems met in aural disease are now recognized by the general practitioner and faced with confidence. The skin is a field full of suggestion which we study for the most varied signs of general disorder and of lessened resistance to external irritation. We do not need to know the nature of eczema or of the various forms of dermatitis to grasp to some useful degree their significance.

The meaning of the surface of the eye should be equally patent; and if it is studied as part of the surface of the body, containing in its small area some of the same problems met elsewhere, it will yield information equally significant.

In order to make quite clear the nature of the lesions to be considered, it will be necessary to review briefly the structure of the cornea. The surface consists of six or eight layers of stratified epithelium, like the epidermis, and, like this, it is renewed if scratched, without the formation of a scar. In reptiles that shed their skin, it is cast off with the external cuticle. Beneath this is Bowman's membrane, the external limiting layer. This is a firm and resistant membrane without apparent structure, which forms a very efficient protection to the stroma beneath from foreign bodies. The resistance of this membrane is evident when a foreign body penetrates the epithelium and lodges in it, and has to be picked out with a needle or when it is necessary to apply some strong antiseptic to an infection of the superficial layers. Without it, the transparency of the cornea would be in constant danger. If Bowman's membrane is destroyed, it is not renewed. Although the epithelium is loosely attached to it, this membrane is firmly connected with the corneal tissue or stroma beneath, which is formed of fifty or sixty layers of fibrous tissue inclosing spaces which contain fixed cells and lymph from the scleral vessels, which forms the only source of nutrition of the cornea.

Posterior to the stroma is Descemet's membrane, the posterior limiting layer which has on its surface, in contact with the aqueous humor, a single layer of endothelial cells. The anterior and posterior limiting layers are impervious to fluid and protect the stroma from infiltration from without and from within.

This very elementary sketch may serve to refresh the memory. In dealing with the eyes of children, it is important to remember that, while epithelial damage is not vital, an infection or injury which passes Bowman's membrane will leave an indelible trace, which is a menace to vision if it lies in the area of the pupil.

Before the child is excited by an attempt to separate the lids, the surface of the eye should be inspected if possible by daylight before a window, so that the even surface of the cornea and its reflecting properties may be studied as the eye follows the finger. Any distorting of the bars of the window, for instance, will indicate an unevenness, which is a sign of past or present trouble.

The examination of the eyes of a resisting child is not always easy, but if there is a history of eye trouble, or if there is secretion on the lashes, or if the child shuns the light and has evident discomfort and cries when attempt is made to separate the lids, the cornea must be inspected thoroughly. This requires a good light and a lens, not to be used as a magnifying glass, but as a means of focusing the light on the cornea—and any one who has to look at the eye should never be without a lens.

An assistant who can hold the child and steady the head is also needed, although the better plan usually is to hold the child's head in one's lap, steadying it between the knees, while the nurse controls the body and arms.

The best elevators are the fingers, but pressure on the cornea must be avoided and this needs practice, especially when the photophobia and blepharospasm is intense, as is often the case in phlyctenular keratitis. If it is necessary to use the elevator of Desmarres, great care must be taken to avoid scraping the cornea.

The control of the child, the arrangement of the light and of the lens, and the manipulation of the lids with due regard for the already inflamed eye may seem difficult, but the importance of these measures can not be exaggerated. An attempt to describe them in detail may be spared, since a very little practice will suggest modes of procedure which will vary with the case. Every book on ophthalmology deals with this subject. Among many excellent works, Haab's "Atlas of the External Diseases of the Eye," edited by de Schweinitz, will be found especially useful for the general practitioner.

There are three points to be considered in examining the cornea, all familiar but not the less important: the corneal reflex, the smooth surface and the transparency. Any clouding of the normal glistening reflex indicates an active process, edema or infiltration. If, with this, there is a defect or depression of the surface, an ulcer is present in an active stage. If the defect glistens, however, showing that the epithelium is restored, the ulcer is in process of repair, or there is a cicatrix. If the infiltration is deeper, beneath Bowman's membrane, the surface may be intact as in the early stage of a phlyctenule or in an interstitial keratitis of syphilis.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909

The formation of vessels beneath the epithelium in pannus or fascicular keratitis and the deeper vessels in interstitial keratitis are to be noted. Ciliary injection and hypopyon should not escape attention and their significance is well known.

It is my purpose to impress on the general practitioner the importance of an early recognition of small lesions of the cornea. In their beginnings, most ulcers can be controlled without serious damage to the eye. Ulcers complicating gonorrheal ophthalmia do not always yield to treatment, however, but here, too, an early and vigorous treatment of the disease will usually prevent such unhappy results.

The importance of Credé's method is acknowledged and the immense progress in recent years toward the prevention of blindness is a matter of sincere congratulation. It rests with pediatricians as much as with ophthalmologists to see that laws are passed and that incompetent nurses and midwives and ignorant parents are not allowed to lose precious time in futile methods before the sovereign remedy, nitrate of silver, is used.

All cases of infants with purulent discharge should be treated as if they had gonorrhea, even if the gonococcus is not found at the first examination. The careful use of nitrate of silver does no harm and may do incalculable good.

The milder silver preparations, argyrol and protargol, should be used as adjuvants only and should not supplant the nitrate of silver in cases that show virulence. In epidemics of measles in a large children's hospital, during the past five years, these milder silver preparations have been used in all cases with secretion, and in no such case has a corneal ulcer developed, although previously such complications were not infrequent.

An ulcer of the cornea in gonorrheal ophthalmia may occur at the margin where the swollen conjunctiva overhangs the cornea or near the center where the nutrition is poor. The ulcers at the margin may be due to the accumulation of secretion beneath the swollen conjunctiva, which makes it very difficult to inspect and cleanse the cornea without abrading the epithelium. The central infection is due in many instances to injury received during examination or cleansing.

It is not the purpose of this paper to deal with treatment in these cases; but the importance of a thorough examination and of care in opening the lids and in removing the secretion can not be exaggerated.

The nutrition of an infant with ophthalmia is often a problem of greater difficulty than the treatment of the disease itself. In a recent paper[1] on this subject attention was called to this important point and reference was made to an article by Lobenstine and Harrar, who demonstrated the ill effects of gonorrhea in the mother on the early nutrition of the child. A question which is often raised is whether the child may remain at the breast. If the infant is nursed by its own mother and her intelligence permits proper care being taken to protect her own eyes, this course should be followed, but in an institution it is rarely possible without assuming a grave responsibility.

Phlyctenular conjunctivitis and keratitis has been a mooted point in ophthalmology, as is eczema in dermatology, and the two conditions have been associated as if they were of the same nature. This only adds to the confusion because it brings under one head two conditions of whose etiology little is known and which actually have little in common.

Phlyctenules are small nodules or collections of round cells beginning beneath the epithelium and frequently beneath Bowman's membrane, as has been shown by Baas. They are not vesicles, as their archaic name implies. No organisms have been found in the early stages, although staphylococci are numerous in their later development. It is probable that they arise from internal irritation, i. e., endogenously from toxins, or, as has been well expressed by Axenfeld, that they indicate the manner in which the conjunctiva, of scrofulous persons especially, reacts to various forms of irritation.

These eruptions are of importance because they appear insidiously and are often not brought to our attention until permanent damage has been done to vision. They are very frequent, especially in ill-nourished children of the poorer classes whose eyes have been neglected, particularly in those with adenoids, whose nares are obstructed and crusted, or who have eczema of the scalp and blepharitis. Undoubtedly ulcers of the cornea arise from direct infection from these sources, but the early stages of phlyctenules are quite characteristic and should be regarded as a probable indication of tuberculosis. After a phlyctenule comes to the surface as an ulcer and is secondarily infected, it loses much of its distinctive appearance, but the deeper infiltration and the vascularity are always suggestive of its origin.

In twenty cases examined recently, in addition to several with manifest tuberculosis of bones or glands, a positive reaction to tuberculin was noted in all except two cases, which were superficial ulcers and not typically subepithelial. Axenfeld has made similar observations, and Verhoeff, whose views of the relation of phlyctenules to tuberculosis have been quoted in the article previously referred to, is strongly of this opinion. These true phlyctenules should then be classed as stigmata of tuberculosis, and, as they not infrequently occur in apparently healthy children, they offer an important indication for further investigation and general treatment.

A characteristic of phlyctenules is their tendency to recurrence during any depression of vitality and their disappearance with tonic treatment and improved hygiene. With the great progress that has been made in recent years in school inspection and hygiene, this very important and interesting condition has diminished during the school age, but in the early years it is frequent, and the scars left on the cornea are too often a cause of impaired vision and lessened usefulness in later life. One meets with young men and women who wish to become stenographers or teachers or nurses, and whose intelligence justifies the ambition, but whose defective corneas make the continued eye work a source of unnatural effort and ultimate discouragement. Many cases of unilateral squint are caused by a minute fleck on the surface of the squinting eye. These local results of the fleeting and often ignored eruption in infancy are very important, and I am glad to be able to call your attention to their broader significance as a sign of a dyscrasia against which we are making a united contest.

Syphilis is a potent cause of corneal opacities and the traces which it leaves are as typical for the diagnosis of that disease as are Hutchinson's teeth. In the initial stages of interstitial keratitis, the cornea is intensely vascular, but the vessels are deeper than in pannus following trachoma or scrofula. These deep vessels are believed to be permanent, remaining visible after all infiltration has been absorbed. as fine branching twigs, extending from the limbus into the corneal tissue. They are seen when the pupil is dilated, with a + 20 D. lens in the ophthalmoscope, if the observer approaches close to the patient and throws the light into his eye. This sign of an early syphilis should be available to the general practitioner, as it is sometimes present when other symptoms are absent and may throw light on obscure conditions of nutrition.

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[1] Cutler: Lesions of the Cornea in Gonorrheal Ophthalmia and Phlyctenular Keratitis, Am. Jour. Obst., 1909, lix, No. 4.

To summarize this paper in a few words, I have tried to show the importance of the normal cornea and to define the changes which have a general significance. The methods of examination have been indicated and certain precautions in the manipulation of the lids have been emphasized. The method of examination with a lens by means of oblique illumination is easily acquired and should be practiced in all cases in which the eyes show signs of irritation and as a means of diagnosis in obscure cases in which tuberculosis or syphilis is suspected. Especial stress has been laid on the early recognition of ulcers and infiltrations which, if neglected, may permanently impair the sight.

Finally, to repeat a familiar idea, the importance of recognizing latent tuberculosis not only for the sake of the individual, but of society, is obvious. Scrofula has been a useful term, but must give way to a more definite expression. It is not needed where tuberculous glands or other lesions are present in which the bacilli may be demonstrated; and in other cases if the patient react to tuberculin, and have phlyctenules or other signs of a toxemia without a discoverable focus, it may be convenient to speak of latent tuberculosis or of tuberculous toxemia.

It has been said that most human beings have successfully resisted tuberculous infection, and the corollary is that, if the condition had been recognized soon enough, the number of those who have not successfully resisted it might have been greatly diminished.

The question of the wider use of tuberculin for diagnosis in schools and especially in children's hospitals is so involved with social and economic considerations that it can not be dealt with in this paper. Nor does it belong to a discussion devoted to ocular matters, but, like most medical problems, it overlaps many fields, and the opinion of this Section would have great weight.

Certain members of the race are the hosts of organisms to which they are in a measure adapted or which they tolerate, but which are still dangerous to others.

Unquestionably "typhoid-carriers" are a very great factor in the dissemination of typhoid; so in venereal diseases, those in whom the disease is latent are most dangerous, and in tuberculosis especially no effort should be spared to discover the unsuspected cases. We may doubt whether the prophecy of Professor Lankester in his Romanes lecture of 1905—"that the knowledge of the causes of disease has become so far advanced that it is a matter of practical certainty that, by the unstinted application of known methods of investigation and consequent controlling action, all epidemic disease could be abolished within a period so short as fifty years"—will be realized, but the ideal of eugenics so recently raised must be held in mind and all possible effort made to realize it.

8 East Fifty-fourth Street.

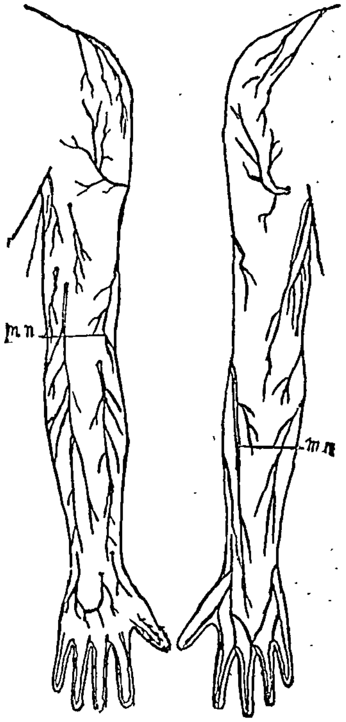
Asclepiades.—Without any increase of positive knowledge, Asclepiades and the Arabs cut loose from the teachings of simple clinical experience. Particularly the latter built up a confused mass of therapeutic measures. Their numberless old and new medicinal internal and external aids and appliances remind us of the detrimental activity displayed by the worst class of our wholesale nostrum vendors.—A. Jacobi, in *Monthly Cyclopedia and Medical Bulletin.*

Clinical Notes

AN ISOLATED NEURITIS OF A SENSORY FILAMENT OF A PERIPHERAL NERVE-TRUNK

ALFRED GORDON, M.D.
PHILADELPHIA

The peripheral nerve-trunks of the extremities, being composed of mixed motor and sensory fibers, when in a state of irritation or inflammation, will give rise to both motor and sensory phenomena. This is a common observation. An isolated involvement of either motor or sensory nerve fibers is sometimes observed. We are very familiar with motor neuritis and sensory neuritis. For example, in multiple neuritis caused by lead intoxication, motor phenomena (palsy) are almost exclusively present and the sensory disturbances are usually *nil.* In syphilis a sensory multiple neuritis may be alone present for a long time. Alcoholic neuritis may be also exclusively sensory.



Innervation of the arm; posterior aspect on the left, anterior on the right; M.N., external inferior cutaneous branch of musculospiral nerve.

If now we consider the individual branches of the main nerve-trunks of the extremities isolated, we find that palsies or inflammations of the motor divisions are not rare, but a neuritis of a sensory filament, judging from the neurological literature, is certainly a great rarity. Within the last eight months four cases came under my observation, all presenting a singular similarity in the localization, also in subjective and objective manifestations, and pointing to an involvement of the inferior cutaneous branch of the musculospiral nerve. The absence of such a record in the literature warrants the publication of my observations.

My four patients are two men and two women. Three of them are of middle age and one (girl) 23 years old. One man is a barber, the other a cutter (tailor), and the two women do housework. None of them except the girl uses alcohol. The latter uses it quite freely.

When they first consulted me, they all complained of a pain immediately behind the external condyle of the right arm. Curiously enough, in every one of them the right arm was involved. When the forearm is in pronation there is no pain. But as soon as slight pressure is made over the above spot at a distance of about a half of an inch above or below, pain was exquisite. The condyle itself is not tender. As to spontaneous or induced movements of the forearm, unless they are violent they are all painless with the exception of supination, which in three of my cases is slightly painful and in one not at all painful. The barber especially states that, while shaving or cutting hair, every time he would have to turn the hand in an outward movement, pain would appear in the mentioned area so that he was obliged to discontinue his work for a few moments. In addition to the pain brought on by pressure or by certain movements, there is also a spontaneous pain behind the external condyle and radiating down the posterior aspect of the forearm on its middle and external sides at a distance of a third of the limb. This pain is paroxysmal, comes on even when the arm is at rest and has the character of a neuralgic pain; that is, it appears suddenly without any apparent cause and is sharp and lancinating.

A careful examination for general sensations of the area of distribution of the lower cutaneous branch of the musculospiral nerve (see illustration) showed in the two men a hyperesthesia, and in both women a hypesthesia to touch, pain and temperature senses. As is well known, the dorsal external cutaneous branch of the musculospiral nerve, passing down between the outer and inner heads of the triceps, divides near the elbow into its upper and lower branches. The upper branch, the smaller, supplies the skin over the lower half of the outer and anterior aspect of the arm. The lower branch, the largest, runs behind the external condyle and supplies the skin of the middle of the back of the forearm, anastomosing with the medial internal cutaneous and musculocutaneous nerves. The partial preservation of sensibility in my patients over the area of distribution of the lower cutaneous branch is probably due to its anastomosis with other sensory branches, but why hyperesthesia should be present in some cases and hypesthesia in others is difficult to explain with certainty. The difference probably depends on the degree of inflammation of the nerve; with a greater degree of inflammation, hyperesthesia is likely to be present, while with a less degree hypesthesia will be the result. This contention finds its corroboration to a certain extent in the course of the neuritis. The two women whose affected areas were hypesthetic recovered in a comparatively short time (from two to four weeks), while the men with the hyperesthesia suffered from four to six months. To sum up, the affection presented exclusively sensory phenomena, namely, tenderness of a sensory nerve-trunk, disturbed objective sensory symptoms (hyperesthesia and hypesthesia) to all forms of sensation over the area of distribution of that nerve, spontaneous pain of a neuralgic character, commencing immediately behind the external condyle and radiating down the back of the forearm at a certain distance. No motor phenomena could be observed in the affected area and trophic disturbances were equally absent. The entire pathological picture was solely in the domain of one sensory branch of the musculospiral nerve.

It was mentioned above that pain could be brought on only by supination in three of the cases. The reason of it lies probably in the fact that the supinator longus arises from the upper two-thirds of the external condyloid ridge of the humerus and from the external intermuscular septum of the arm. The lower branch of the dorsal cutaneous branch of the musculospiral nerve, which is involved here, also separates from its upper branch at the level of the intermuscular septum. There is consequently great proximity of the origin of the nerve and muscle; a display of the latter will naturally irritate the nerve which is in a state of inflammation.

The etiology of this neuritis is probably that of neuritis in general. None of my patients could tell whether a trauma had been sustained or not; perhaps a slight trauma did exist, but passed unnoticed. Exposure to cold may have been a factor: the two women were obliged to do general housework; their arms were frequently, they say, in contact with cold water. Have the occupations of the male patients anything to do with their sensory neuritis? They said, however, that they were obliged to discontinue their work, as the latter invariably caused pain. A complete rest gave complete relief. While it is easy to conceive that some stretching of tissue and of cutaneous nerves takes place when the forearm is in a state of flexion for a long time (and this is precisely the situation with barbers and cutters), it is nevertheless difficult to attribute the neuritis exclusively to this factor, as otherwise a sensory neuritis of that particular nerve would be a frequent occurrence, which is, of course, not the case. The two male patients and the middle-aged woman have been suffering from rheumatism for years. The cutter had once an attack of occupation cramp in the right hand. The barber had once a paresis in the right hand following a cold bath. The girl is an alcoholic and perhaps syphilitic. All these predisposing factors probably played a certain rôle in the etiology.

As to the treatment, Bier's method of induced hyperemia was apparently successful in the middle-aged woman, but unsuccessful in the others. Complete abstention from work and exposure, hot baths locally applied and aspirin internally gave considerable relief. It is practically the same treatment as used in other forms of neuritis.

1430 Pine Street.

STITCH SCISSORS FOR EYE, EAR, NOSE AND THROAT

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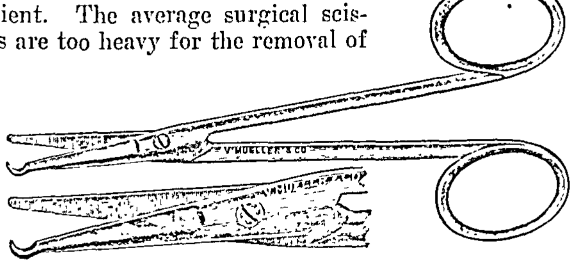
I have long felt the need of a pair of scissors which would enable me to remove stitches from wounds more rapidly than do ordinary scissors and at the same time with less inconvenience to the patient. The average surgical scissors are too heavy for the removal of stitches, and they often permit the sutures to slip over the end of the engaging blade.



The scissors here illustrated enable one to remove stitches from the conjunctiva, lids, mastoid, turbinate, etc., with a minimum of pain.

Physicians' Block.

A CIRCUMCISION OPERATION FOR THE YOUNG

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ST. LOUIS, MO.

The text-books on surgery seem to imply that a circumcision is the simplest of procedures. The operation, however, is often troublesome. Postoperative complications do occur. The penis may become edematous to the point of making urination difficult. In certain cases the swelling and induration subside only after the removal of the stitches. More or less oozing of blood may persist for days or a hematoma of no small size delay the union of the parts. Inflammation in the tissues may be marked; this may abate rapidly or pass away only after the skin has broken and discharged its pocket of pus.

There is in nearly every circumcision some swelling of the organ. When the purse-string suture was advocated this condition was marked. If many interrupted stitches are placed close together so as to secure too perfect a coaptation of the edges the edema appears very promptly after twenty-four hours. A few loosely tied stitches give a decidedly better result. The query arose why sewing was employed at all, at least in the young. Cannot the skin be cut so that the edges are sufficiently approximated for a good result? If this can be done, the blood and lymph can more readily find a vent; the trauma to the tissues resultant from handling with the tissue forceps and needle and thread will be minimized; the reaction from the operation less disturbing. In a series of cases the operation has been carried out with this idea in mind and the result has been most satisfactory. The wound required very little attention; the comfort of the patient was not interfered with; a good result was obtained in five to ten days. I recommend the operation here offered as efficient, easy and quick.

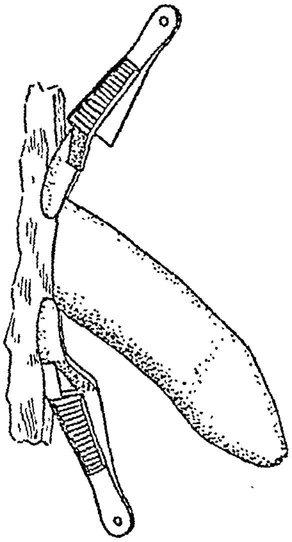

Fig. 1.

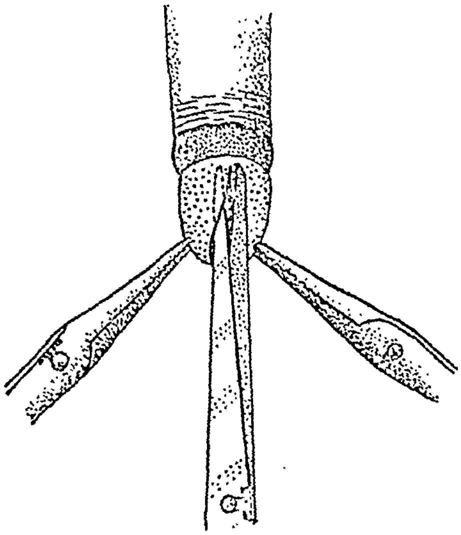

Fig. 3.

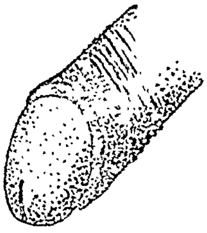

Fig 5.

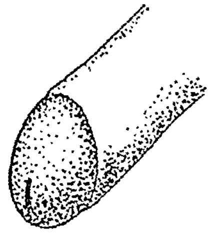

Fig. 6.

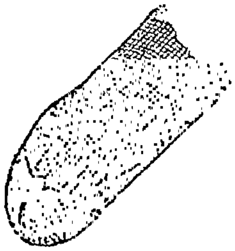

Fig. 8.

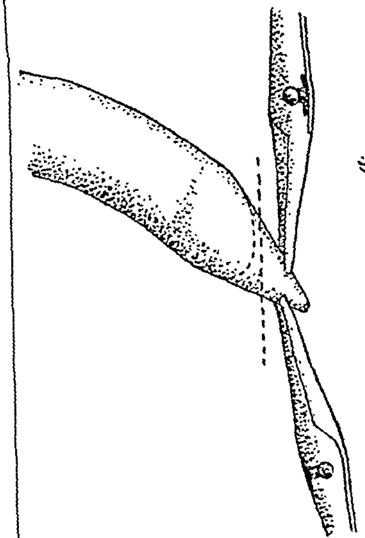

Fig. 2.

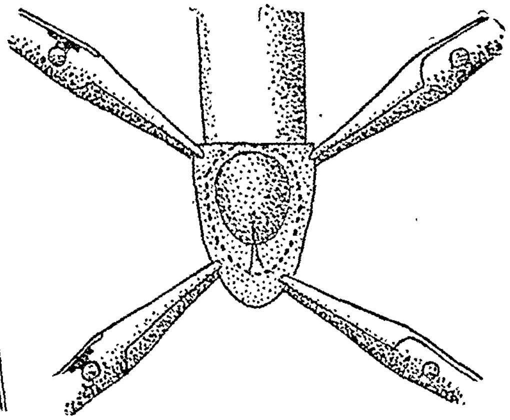

Fig. 4.

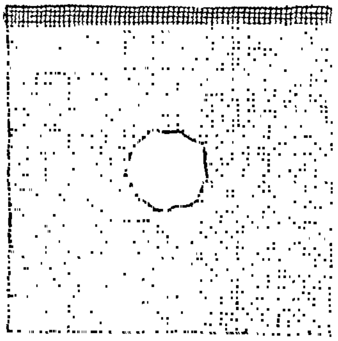

Fig. 7.

STEPS IN THE OPERATION

1. The penis is held in place by two snaps, which pinch the skin of the organ between the selvage edge of two lengthwise adjusted towels (Fig. 1).

2. When the penis is in position, the location of the glans is determined and the amount of superfluous prepuce noted. One hemostat is applied above and one below in an oblique line so that more skin is removed from the under surface than from the dorsal. The hemostats pull the foreskin forward and then the skin is cut off with straight scissors along the dotted line, as shown in Figure 2. If the tissue is correctly removed the skin edge will retract to the corona. In the removal of the foreskin of a babe in the first months of life it is well to bear in mind that the parts are all diminutive and that the entire corpus is not much longer than the glans. Carelessness in this consideration results in an almost complete denudation of the organ; the skin retracting to the base of the penis.

3. The inner skin layer, or mucous membrane layer, as it is sometimes called, is slit down the dorsal surface to within one-fourth of an inch of its attachment (Fig. 3).

4. The edges of the inner layer are held with a few hemostats to facilitate the removal of all but a small collar at its attached edge. The dotted line in Figure 4 indicates the line of excision followed by the scissors.

5. The little bleeding vessels, two to four in number, are caught up and in every case tied with plain No. 00 catgut. This saves much postoperative annoyance.

6. Figure 5 shows the skin drawn up on the corpus away from the corona. Figure 6 is the result when the skin is allowed to come forward to the corona, where it meets the trimmed margin of the mucous membrane layer.

7. A piece of gauze with a small opening at its center is steeped in melted 10 per cent. boracic petrolatum and applied to the parts at the completion of the operation (Figs. 7 and 8). The dressing is changed if it comes off and may be discarded completely on the third day. The parts are then protected by boric ointment.

CHOICE OF ANESTHETIC

The use of cocain in children is not advisable, and the general anesthetic is probably the most desirable method. Infants only a few years old may be held by two assistants and the operation done without any anesthetic. I desire to call attention to the method of bandaging the child to a board after the Indian fashion of strapping the papoose; for this purpose a narrow cushioned board and a few bandages are all that is required to hold the child firmly in place until the operation is ended.

OBJECTIONS TO THE OPERATION

It may be asked, what happens to a patient operated on in this manner if the penis becomes erect.

The parts permit the easy stretching of the wound and there are no stitches to pull open or to cut through the tissues. When the erection has subsided the tissues contract and the edges of the wound are approximated in a satisfactory manner.

Against the operation may also be mentioned the fact that much of the wound heals by granulation. While this is true, a wound which is difficult to keep free of infection should not be sewed up tight.

The object of this paper is not to lay claim to originality, but to bring before the profession a procedure which has many advantages over the operations in vogue and one which gives most pleasing results when done in patients before the age of ten or twelve years.

4900 Berlin Avenue.

A SIMPLE, RAPID, AND ACCURATE METHOD FOR THE DETERMINATION OF AMMONIA AND ACETONE IN URINE

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LAS ANIMAS, COLO.

Many of the propositions of chemistry, like those of mathematics, are susceptible of easy demonstration. To this class belong the following:

PROPOSITIONS

1. When 50 c.c. of fluid containing 0.5 gram of sodium carbonate, 50 mgm. of ammonia, and 25 mgm. of acetone is distilled, the entire amount of the NH_3 and $CH_3.CO.CH_3$ will pass over with the first 25 c.c. of distillate. This proposition is certainly true, but it is equally certain that it is not generally known. If it were, we should not be directed, as we usually are by text-book writers, to collect the acetone from urine by distilling 100 c.c.—or less—until seven-eighths of the fluid has passed over.[1] Nor should we have been cautioned to test the subsequent distillate for acetone.

2. When 10 c.c. of a solution containing from 0.5 to 8 per cent. of urea is diluted with 40 c.c. of water containing 0.5 gram of sodium carbonate and distilled so that 25 c.c. will pass over in from four to eight minutes after boiling begins, the distillate will contain one half as many cubic centimeters of decinormal ammonia as the solution contains grams of urea per 100 c.c.; i. e., the per cent.. of urea divided by two will give the number of cubic centimeters of decinormal ammonia resulting from ureal decomposition. The exact amount of the ureal ammonia will vary with the time required in collecting the distillate, the amount being greater as the time is longer. When, however, the time required ranges between four and eight minutes, as in practice it probably always will, the constant (per cent. urea divided by 2) may safely be used, for all clinical purposes, as expressing the amount of ammonia produced by the action of the sodium carbonate on the urea.

3. The presence of such an amount of ammonium sulphate as could occur in neutralizing the distillate from 10 c.c. of urine with sulphuric acid has no effect whatever on the accuracy of Huppert's modification of Messinger's method for estimating acetone. Ogden,[2] Simon[3] and others make the erroneous statement that acetone cannot be estimated in the presence of ammonia.

4. The presence of such quantities of alcohol as may be recovered from urine, or as may be introduced with the indicator used in estimating ammonia, in no way affects the determination of acetone by the iodoform (Messinger-Huppert) method.

On the above propositions is based the following simple, rapid, and clinically accurate method for the determination of ammonia and acetone in urine. It will usually only require about thirty minutes to carry out the process.

PROCESS

Apparatus Required.—The apparatus at present used in this laboratory is that shown in the accompanying drawing. It represents an outlay of about one dollar, and weighs, excluding the battery jar, only 175 grams. It is light, durable, convenient, and gives good results.

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[1] Autenrieth (Detection of Poisons, page 42) says: "Acidify from 200 to 50 c.c. of the urine with a few drops of sulphuric acid and distil. Collect 20 or 30 c.c. of distillate. This will contain the entire quantity of acetone in the urine."

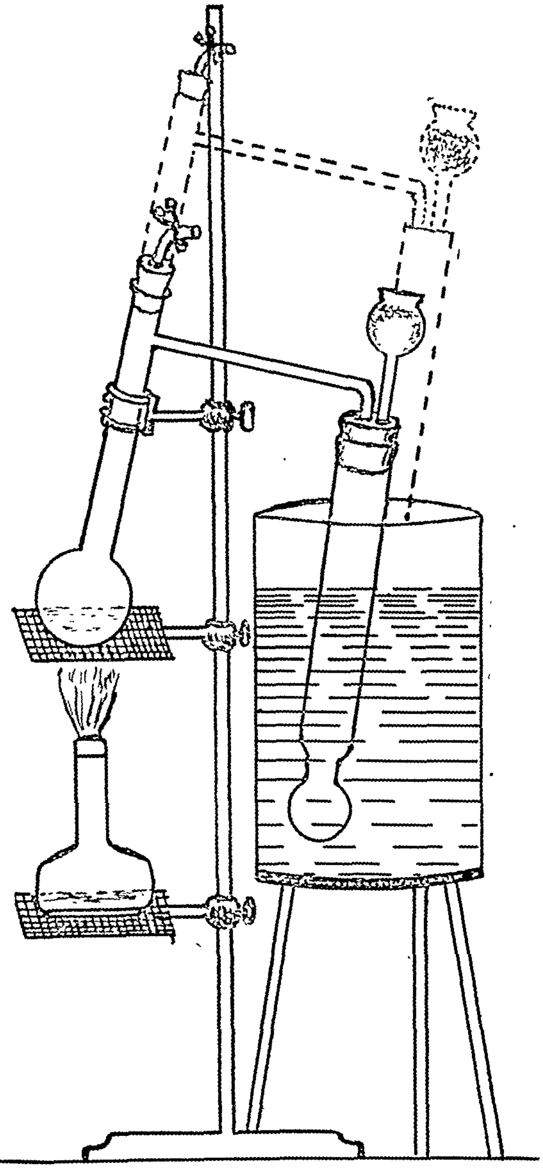
[2] Ogden: Clinical Examination of the Urine, page 176.

[3] Simon: *Clinical Diagnosis*, page 532.

Determination of Ammonia.—The apparatus being in the distilling position shown in the illustration, the battery jar is filled with water until the surface of the water is about 30 mm. below the top of the receiving tube. The apparatus is then raised into the second position, shown by the dotted lines, and held there by means of the burette clamp. The receiving tube is then removed and 25 c.c. of decinormal sulphuric acid from a pipette is poured into it. The glass wool in the thistle-headed funnel is thoroughly moistened by pouring several cubic centimeters of distilled water over it, the excess being allowed to flow into the battery jar. The receiving tube is now firmly fixed, the rubber stopper carried by the stem of the distilling flask, and the apparatus lowered into its original position. By means of a long-stemmed thistle funnel 10 c.c. of the urine[4] are introduced, followed by 40 c.c. of water containing 0.5 gm. of sodium carbonate. The distilling-flask is immediately closed and heat applied. This should be of such intensity as will bring over 25 c.c. of distillate in from four to eight minutes after boiling begins. A Barthel's alcohol or gasoline burner or a Bunsen gas burner will answer equally well. During the distillation it is advisable to stir the water in the battery jar once or twice, as otherwise the water near the surface will become unduly heated, while that near the bottom will remain cold.[5] When the distillate reaches the 50 c.c. mark on the receiving tube the source of heat should be removed, the air-cock on the distilling flask opened, and the glass wool washed by pouring about 25 c.c. of distilled water through it into the receiver. Now the apparatus is raised into the second position, the receiver removed and its contents transferred into a flask containing about 200 c.c. of distilled water. A few drops of cochineal,[6] or, wanting this, alizarin red, are added as indicator, and the decinormal sodium hydroxid solution run in[7] from the burette until a permanent change of color results. The number of cubic centimeters of the decinormal sodium hydroxid required deducted from 25 will give the total number of cubic centimeters of decinormal ammonia contained in the distillate. From this amount are deducted one-half as many cubic centimeters as the per cent. of urea which the urine contains, and the remainder multiplied by 0.017. This will give the per cent. of ammonia contained in the urine; i. e., grams of NH_3 per 100 c.c. This may be represented in formula as follows:

$$Y = 17\ [25 - (X + \frac{\%\ \text{urea}}{2})]$$

In this formula Y is the number of milligrams of ammonia contained in 100 c.c. of urine, when X is the number of c.c. of the decinormal NaOH required to neutralize the excess of acid.



The apparatus shown in the drawing consists of the following: 1. A 250 c.c. Baloc distilling flask fitted with a rubber stopper through which passes a short glass tube, over which is fitted a short rubber tube. This air-cock arrangement is opened or closed by means of a Hoffman's tubing clamp. The remote end of the stem of the distilling flask is bent as shown, and is tightly fitted into a two-holed rubber stopper; the end of the tube should reach 25 or 50 mm. below the stopper. 2. Through the second hole of this stopper is passed the stem of a thistle funnel, the stem having been filed off to a length of about 75 mm. The head of the funnel is loosely packed with glass wool. 3. A large (100 c.c.) potato culture tube carrying a mark around the circumference at the 50 c.c. point. This is obtained by pouring 50 c.c. of water into the tube and marking with a wax pencil. A file being subsequently used. 4. A three and one-half liter battery jar. The use of the tripod permits the water in the jar being changed without the slightest inconvenience. The dotted lines show the second position of the apparatus. This allows the receiving tube to be easily removed or placed in position.

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[4] If the urine cannot be had soon after it is voided it should be preserved with a few drops of chloroform. If more than a trace of albumin is present it should be removed before distilling.

[5] Three distillates may be collected without changing the water in the battery jar, provided it has a capacity of three or four liters.

[6] An excess of the indicator must be avoided. The best results may be obtained by adding a very small amount—say half a grain—of the powdered cochineal.

[7] As a simple and accurate means [illegible] tric acid and alkali solutions I suggest the [illegible] Dissolve about 50 grams of sodium hydroxi[illegible] in 1,100 c.c. of distilled water. 2. Accurately weigh 3.3 grams of chemically pure ammonium sulphate and dissolve in sufficient distilled water to make 500 c.c. 3. Dilute 25 c.c. of formalin (40 per cent. HCOH) with about 75 c.c. of distilled water. Add several drops of phenolphthalein and then run in the sodium hydroxid solution from the burette until a faint pink color is permanent. 4. Measure accurately 25 c.c. of the decinormal ammonium sulphate solution into a small flask and add about 15 c.c. of the neutral formalin solution. This liberates exactly 25 c.c. of decinormal sulphuric acid. Now add a few more drops of the phenolphthalein and run in the sodium hydroxid from the burette until a permanent, faint pink color appears. Repeat the experiment and from the data obtained correct the remaining sodium hydroxid solution by adding to 1,000 c.c. of it a sufficient amount of distilled water to make 25 c.c. of it correspond to the acid liberated by an equal volume of the decinormal ammonium sulphate solution. From the resulting decinormal sodium hydroxid solution can then be prepared the decinormal sulphuric acid. Inasmuch as ammonium sulphate can easily be obtained of great purity, and contains no water of crystalization, it is believed that it will afford a more accurate means of preparing decinormal solutions than either oxalic acid or sodium carbonate. Decinormal solutions made in this way have, in this laboratory, been found to agree exactly with those standardized gravemetrically.

Determination of Acetone.—The neutral fluid obtained in the ammonia estimation is, if necessary, made up to 300 or 350 c.c. with distilled water and 10 c.c. of decinormal iodin added, followed by 10 c.c. of a 10 per cent. aqueous solution of sodium hydroxid. This is allowed to stand for fifteen minutes; then 10 c.c. of a 10 per cent. (by volume) sulphuric acid solution are added. The free iodin is then determined by means of decinormal sodium thiosulphate solution.[8] This is run in from the burette until only a light brownish-yellow color remains. At this point ten or fifteen drops—not more—of the starch solution[9] should be added and the thiosulphate solution should be added by degrees until the blue color is just discharged. The number of cubic centimeters of the thiosulphate solution required deducted from the total number of cubic centimeters of the iodin solution used will, when multiplied by 9.7, give the number of milligrams of acetone contained in 100 c.c. of the urine. One c.c. of decinormal iodin combines with 0.97 mgm. of acetone. But as only 10 c.c. of urine were used, the number of cubic centimeters of iodin required is multiplied by 9.7 to get the number of milligrams of acetone in 100 c.c. of urine.

It need hardly be said that the above method for estimating acetone is proposed as being clinically accurate, and that it is reliable. experiments leave no room to doubt. How nearly the results may be made to approach absolute accuracy is not definitely known at present. It is not thought probable that the error will ever exceed 2 or 3 mgms. of acetone in 100 c.c. of urine. Variations of this magnitude may easily occur in perfect health, and hence, from a clinical standpoint, are of no importance whatever. The method is, of course, not applicable to urines which contain sugar, since acetone is produced when dextrose is treated with boiling alkaline solutions. If the urine contains as much as 5 or 10 per cent. of sugar it would, when distilled as above with the sodium carbonate solution, yield about 5 mgm. of acetone as a result of the decomposition of the carbohydrate.

In the presence of sugar the following procedure should be adopted. It requires but little more work and no more time: (1) Dilute 10 c.c. of urine with 40 c.c. of water. Add enough 36 per cent. acetic acid—about 1 c.c.—to make strongly acid to litmus. Place 25 c.c. of water in the receiving tube. Distill until 25 c.c. come over. The distillate and washings from the glass wool is made up to about 300 c.c. and the acetone determined as directed above. (2) While waiting for the iodoform to separate take an additional 10 c.c. of the urine and dilute with 40 c.c. of water containing 0.5 gram of anhydrous sodium carbonate and, having placed 25 c.c. of decinormal sulphuric acid in the receiving tube, distill over 25 c.c. Estimate the ammonia as directed above.

If the acetone distillate contains nitrous acid, the results will be vitiated owing to the decomposition of the potassium iodid contained in the decinormal iodin solution. The distillate will, however, never contain nitrous acid unless the urine has undergone bacterial decomposition. Since reliable information is not sought from an analysis of badly decomposed urine, the presence of nitrous acid is an exceedingly improbable source of error. It may, if present, be detected with a little starch-potassium-iodid solution, and eliminated by adding a little urea to the distillate. I have applied this reliable test to the distillate hundreds of times, but have abandoned it as a routine procedure, as in no instance has nitrous acid been found present.

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[8] In case the urine contains more than 98 mgm. of acetone in 100 c.c. no free iodin will be liberated on adding the acid. This will not often be the case, however, but should it occur it will be necessary to add an additional 10 c.c. of the iodin solution; again, to make alkaline with about 15 c.c. of the sodium hydroxid solution, allow it to stand about fifteen minutes, as before. This procedure could always be obviated by adding 25 c.c. of the iodin solution in the first place. This should be done when acetone is known or suspected to be present in greatly increased quantities.

[9] Made by adding 1 gram of starch to 100 c.c. of 0.5 per cent. sodium hydroxid in distilled water, heating to the boiling point and cooling in running water. This solution will keep for several months

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CARCINOMA OF THE SIGMOID WITH METASTASIS IN THE LEFT ILIUM

REPORT OF A CASE

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AND
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When reading the recent literature on carcinoma of the sigmoid, we were impressed by the fact that the *most important question is not so much one of operative technic, but one of early diagnosis*, the point dwelt on by Armstrong and by Bloodgood.

The classic symptoms of this disease are all signs of a late stage, namely, obstruction of the bowels or its results. There is a dearth of signs which indicate this condition in its incipiency. Sigmoid carcinoma gives a good prognosis only when operated on in its earliest stage. This paucity of signs in the early stage justifies a more frequent employment of explorative laparotomy even when the symptoms are insufficient to establish an early diagnosis. The so-called pathognomonic symptoms of this disease are in reality manifestations of a late stage at which we can seldom expect a cure by operation.

A history of the following case, bearing on the above, seems to us of sufficient importance to be recorded in the surgical literature. Dr. Benson reports the following:

History.—On June 18, 1908, early in the morning, Mrs. K., aged 42 years, consulted him, stating that she had been awakened the previous night by severe pains in the abdomen. After a short interval she felt nauseated and began to vomit. As far as he could learn, the vomitus consisted of some particles of food and slime together with a small quantity of a yellowish fluid. She added that there had been no bowel movement for the past three or four days. Pulse was somewhat accelerated and the temperature normal. Consent to a more thorough examination could not be obtained at this time. The patient merely wanted something to relieve her pain, believing her symptoms trivial and temporary. For the vomiting Dr. Benson prescribed hourly doses of 1/10 grain of calomel, small pieces of ice, and rest in bed. In addition enemas of soapsuds were given and all food and drink was withheld. The same afternoon the pain became more severe. The vomiting had almost ceased. Repeated enemas of soap-suds were ineffective. Patient stated that she had been previously healthy. Her family history was negative. She had been married twenty years and had never been pregnant.

Examination.—The patient was fairly well nourished; her color was good. Cachexia was noticeably absent. The thoracic viscera were examined in detail. All were seemingly normal. The abdominal findings were: Liver and spleen were not enlarged. There was very little distention. No tumor could be found. Bimanual examination through vagina and through rectum revealed nothing abnormal. An examination of the urine proved negative. From the above findings, obstructions which form enlargements could be eliminated. The picture was that of a chronic obstruction in the distal portion of the colon, the sigmoid.

The following day the patient's bowels moved. An emulsion of castor oil (Fenner's formula) had been given. The stools were not saved for the physician's inspection. The patient ceased visiting him. On June 27, 1908, patient returned and said that her bowels had not moved for three days. Magnesium sulphate was given. At 2 a. m. June 28, 1908, the doctor was called to see her in an acute attack. It was similar to the first but more severe. The patient's abdomen was more distended. Her temperature was 99.8 F. The abdominal pain was more severe. Pulse was 84. Morphin sulphate was given hypodermically to allay the pain. The enemas and other directions were the same as during the first attack. Dr. Louis Rassieur saw the case with Dr. Benson a few hours later. He concurred in the diagnosis of a bowel obstruction and that it was probably due to sigmoid cancer. Patient was sent to the hospital June 29, 1908. Here the sigmoidoscope (Strauss) was introduced. At a depth of 18 cm. a seeming narrowing of the lumen could be seen. During the examination a little liquid feces passed the point of supposed stricture. The following day this procedure was repeated. The sigmoidoscope was introduced for 24 cm. and no stricture could be seen.

First Operation.—A laparotomy was made by Dr. Rassieur on July 2, 1908. An incision was made in the median line below the umbilicus. There was no ascites. The sigmoid presented a constriction.. It looked as if a ligature had been passed around the intestine. There were no adhesions. About 15 cm. of intestine were excised, including the part of the mesentery which contained several indurated lymph nodes. An end-to-end anastomosis was made. The sutures were of Connell type and of linen. The abdomen was closed without drainage. The constricted mass of the intestine was hard.

The bowels moved two days after the operation and have since been regular. The wound healed by first intention. On the third day after the operation the patient complained of pain along the course of the left external cutaneous and the left ilioinguinal nerves. The patient's general condition improved rapidly, however. The pain steadily increased in severity, notwithstanding the giving of antirheumatic and antineuralgic drugs. In the latter part of September, 1908, the soft parts over the crest of the left ilium seemed to be somewhat enlarged and of a doughy consistency. The bone also seemingly showed a thickening. An *x*-ray picture verified this view. No other metastasis could be found.

Second Operation.—This was made October 19, 1908, to remove the enlargement of the ilium. An incision was made over the crest of the ilium from the posterior superior spinous process of the ilium to the middle of Poupart's ligament. The muscles and fascia were edematous. The peritoneum was not adherent and fell away on division of the muscles. A tumor of the ilium of osteoclastic nature 5 inches by 3¼ inches by 2⅝ inches was removed with bone drill and Gigli saw. An additional rim one-half inch in diameter was removed from the ilium with rongeur forceps. Then the fascia lata and the divided fascia iliaca were again united to the fascia iliaca. A small cigarette drain led to the bone. Portions of external cutaneous and ilioinguinal nerves were excised.

Postoperative History.—The convalescence after the second operation was uneventful up to the middle of February. Until that date the patient was free from pain; there was no recurrence of the tumor; no hernia marked the site of the removed bone, and a slight limp alone hinted at the disturbed relation of the muscles. On March 16, 1909, we learned, the patient again walked with difficulty. She had pains in the affected lower extremity, extending down into the foot, which kept her awake. She presented a tumor on the left iliopectineal eminence, the beginning of which, she said, was insidious about four weeks before. An operation was advised. Owing to circumstances which we could not avoid, the patient was transferred to the care of other physicians.

Description of First Specimen.—The stricture of the sigmoid was so fine as to forbid the passage of the smallest surgical sound. A cup-shaped ulcer was on the distal side of the stricture. Microscopic examination showed the original tumor to be very small. The contraction and cicatrization were seemingly due to secondary inflammation. The specimen was an adenocarcinoma. In some instances the excretory duct of the cancer tubules could be seen emptying in the end of the Lieberkühn glands. There were few glandular metastases showing tubo-alveolar arrangement and round-cell infiltration.

Description of Second Specimen.—The diameters of the metastases in the bone were stated above. The tumor was osteoclastic and originated in the medulla of the crest of the ilium. A smear of the medulla, stained with azur No. 2, showed cancer cells. A hardened section stained with Unna's polychrome methylene blue and Unna Taenzer's elastic stain showed an adenocarcinoma with many figures of indirect cell division and remains of bone.

The first and second *x*-ray pictures showed the tumor, which extended on the inside almost to the brim of the pelvis and on the outside almost to the acetabulum. The third *x*-ray picture showed the remains of the bone and an absence of recurrence. The fourth,made Mar. 20,1909, showed a tumor over left iliopectineal eminence and a questionable shadow on left trochanter. The radiographs were made by Dr. Carman.

In conclusion, we believe the following points of especial interest:

1. Extreme stricture of the sigmoid with such a paucity of clinical signs.
2. A seemingly solitary metastasis and that in the ilium of the same side and apparently none in the usual site.
3. The shortened convalescence after excision of the sigmoid and union without drainage.
4. The value of a second operation to remove a seemingly solitary metastasis, demonstrated by the patient's temporary improvement. We were in hopes that this might even prove a cure.
5. Absence of hernia after removal of so large a portion of the iliac bone.
6. The value of the *x*-ray in the demonstration of bone metastasis.

We wish to add that, after a careful perusal of the literature, not a single case was found in which there was a seeming single metastasis, even in the iliac bone (an accessible field).

2136 Benton Street—316 Metropolitan Building.

Evolution in Purin Metabolism.—According to the studies of H. G. Wells (Trans. Chicago Path. Soc., May 1, 1909), the invertebrates are able to convert adenin into hypoxanthin and guanin into xanthin, showing the presence of the enzymes, adenase and guanase, but the metabolism proceeds no farther. Passing upward in the scale of animal life to the birds and reptiles we find that nitrogen is excreted chiefly in the form of uric acid. Mammals form uric acid only from the purins and have the power of destroying some of the uric acid formed. The enzymes that destroy uric acid seem to be the last formed in development and are possessed by various mammals in varying degrees and in the same animal often show an uneven distribution in the various organs of the body. This uricolytic power is relatively weak in man. Wells cites the observations of Mendel and Mitchell on embryo pigs as illustrating the biologic law that the individual in its development reflects the entire development of the species to which it belongs (*Am. Jour. of Physiol.*, 1907, xx, 97). They found nuclease and adenase at very early stages, but no xantho-oxidase until the fetal pigs had reached a length of 200 mm. or over. In other words, in its earlier stages of development the pig possesses only the same purin enzymes as the invertebrate, while somewhat later it is equipped as the birds and reptiles may be supposed to be; that is, with xantho-oxidase, but without uricolytic enzymes. The uricolytic enzyme is wanting entirely until after birth, when it soon makes its appearance, but in the suckling pig it is still not so active or abundant as in the adult animal. This enzyme is, therefore, the last of the entire series of purin enzymes which is acquired by the developing individual, just as it seems to be the last to be acquired in the evolution of the animal kingdom.

Therapeutics

PNEUMONIA AND ITS COMPLICATIONS

Since the discovery of the tubercle bacilli by Robert Koch, in 1882, much has been learned in regard to the rôle of micro-organisms in the pathology of disease. These discoveries have been supplemented by and have rendered possible the introduction of antiserums and vaccines in the treatment of some diseases. Of these the antiserum, or, as it has been commonly called, the autitoxin of diphtheria, is the most successful one and the one best known. Diphtheria is recognized as a general toxemia produced by a local infection.

Acute pneumonia, on the other hand, is practically always a pneumococcus septicemia. The pneumococcus (the *Diplococcus pneumoniæ*) which Fraenkel discovered in 1883 is the cause of true pneumonia. This organism is not confined to the lungs or to locally infected areas, but may be found in the blood. It has been shown that antipneumococcus serum has no bactericidal effect on living pneumococci, and that different strains of pneumococci are not affected in the same way by different vaccines; so that animals immunized against one strain are not necessarily protected against others. Hence it has been found desirable to prepare the vaccine from cultures made from the pneumococcus infecting the individual patient. When this is impracticable, a vaccine from a particularly virulent strain may be used.

"The bacterial vaccine consists of the specific organism isolated in pure culture and, after destruction by heat, suspended in normal salt solution."—(Floyd and Worthington, *Boston Medical and Surgical Journal*, Jan. 2, 1908). In acute pneumonia, a pure culture may generally be obtained from the "rusty" pneumonic sputum.

Dr. A. Butler Harris, of London, has recently published (*Brit. Med. Jour.*, June 26, 1909) a report of his investigations and observations on the vaccine treatment of pneumonia. Harris grows the pneumococci obtained from the patient on agar-agar which has been smeared with a thin layer of blood drawn from the finger. When the patient's sputum is not available, he advises the withdrawal of some of the patient's blood from the median basilic vein, and generally thus obtains enough pneumococci for the culture. His technic is well described in his article.

It has been found that the pneumococcus is present at different times, somewhere in the air passages of perhaps 50 per cent. of all individuals, especially during the winter. The most characteristic location for the manifestation of its pathologic action is in the lungs, where the inflammation that it causes usually runs an acute and rather short course. By no means infrequently, however, cases occur in which the lung lesion does not resolve and the pneumonic process continues and the pneumococcus persists, or the pneumococcus has infected other regions which do not tend to heal, such as the pleura, peritoneum, endocardium, joints, veins, and middle ear. These are typical instances in which pneumococcus vaccine should be used.

Harris reports eleven cases of various forms of pneumococcic infection. Three patients died early from failure of the heart. One man, aged 36, died on the fifth day, after having received inoculations on the third, fourth and fifth days. A man, aged 58, was taken with recurring rigors and consolidation of the base of the left lung. He received an inoculation the same day at 6 p. m., and the next morning at 10:30 a. m. was convalescent. The other seven cases were of a chronic character and included delayed pulmonary resolution, empyema, asthma, and joint infection. All were benefited by the inoculations.

The dosage varies from ten to twenty millions of dead pneumococci in children of 3 or 4 years of age to from thirty to eighty millions for adults. The dose may be repeated every twenty-four hours if necessary, or every third or fourth day.

Harris summarizes his conclusions as follows: "1. Successful inoculation for pneumonia is possible. 2. Inoculation does no harm. 3. A vaccine from one or a number of virulent strains should be used. 4. It should be introduced as early as possible. 5. The estimation of the opsonic index is not necessary. 6. The observation of the temperature and physical signs is in pneumonia a sufficient guide in gaging the repetition of the dose."

We can but agree with his final proposition, viz.: that "infections of the lung by the pneumococcus which fail to resolve after an acute pneumonia, as well as pneumococcus infections of other areas, ought certainly to be treated with a pneumococcus vaccine." An autovaccine should be preferred, and the prospect of successful treatment seems good.

DIET IN CHRONIC DISEASES

This is the age of "diets" and fads in diets. Whether the well eat too much or too little, too frequently or too infrequently, too much protein or too little protein, too much carbohydrate or too little carbohydrate, is a subject too large and too varied to discuss here. It is important, however, and necessary to analyze carefully the food and digestive power of a patient who is suffering from chronic disease or disability.

It is certain that unnecessary amounts of or ill-chosen food can cause fermentation and even putrefaction in the intestines. If actual autoinfection is not caused, certainly nervous and circulatory irritants may be absorbed from such abnormal intestinal fluids. These irritants may create disease, and certainly will augment disease that is present.

Dr. William H. Porter, of New York, writes a thoughtful paper (*Post-Graduate*, June, 1909) on the subject of this article, and specifically presents a diet that he says will minimize intestinal indigestion. He calls to our mind the subdivisions of food as:

1. Inorganic, including water and salts.
2. Cellulose, starch, and sugar. } Heat-producing
3. Fats of all kinds. } substances.
4. Proteins.
5. Protein-like compounds, to which an atom of iron and phosphorus is attached in its synthetic formation. These may be distinguished as hemoglobin-yielding and lecithin-yielding substances.

The last two classes are the construction tissue building protein compounds.

Each of these five classes must be represented in the daily dietary in order to insure the most satisfactory nutritive results, and at the same time caution must be exercised that the total amount of food be kept within the "oxygenating capacity" of the system.

The five classes of food enumerated above are contained in both animal and vegetable foods. Accordingly, it is not surprising that there have been advocates of an exclusive vegetable diet; and, on the other hand, that it has been proposed to exclude articles of vegetable origin more or less completely from the diet, food of animal origin only being advised.

In order to correlate an adequate amount of the different classes of food to fulfill the demands of the body for heat-producing, tissue-building, and hemoglobin-yielding, [illegible] substances with the "oxygenating [illegible]y, it has been found that a mixed diet, comprising both animal and vegetable substances, is most advantageous.

In health, Nature allows a considerable latitude between the amount of food which can be taken and the "oxygenating capacity" of the body. But in disease conditions are changed, the "oxygenating capacity" is lessened, and care must be taken not to overtax it by excess in ingestion of food beyond the body demands.

With the above generalizations Porter suggests the following as an ideal mixed diet for patients who are suffering from chronic disease:

"For breakfast: Two eggs, eight ounces of milk, two ounces of wheat bread and butter.

"For the mid-day meal: From one-quarter to one-half pound of beefsteak, eight ounces of milk, three ounces of wheat bread and butter.

"For the night meal: From one-quarter to one-half pound of beefsteak, eight ounces of milk, two ounces of bread and butter.

"At bedtime: Eight ounces of milk."

Beefsteak is used as a representation of the meats because it is most easily and perfectly digested; for it may be substituted lamb, mutton, veal, fish, poultry, and game.

If it is desired to enlarge this diet by substituting a vegetable in place of a part of one of the articles enumerated, string beans, green peas, lima beans, spinach, lettuce, asparagus or cauliflower, well cooked, may be permitted.

Porter enumerates as foodstuffs to be avoided "all fruits, either cooked or raw; all cereals and breakfast foods, nuts, sweets and pastry of all kinds, potatoes in all forms, onions, tomatoes, turnips, parsnips, carrots, celery, radishes, cabbage, egg-plant and oyster-plant, corn, etc.; pork in all forms, except as before stated, rich gravies, and all forms of soups." Most of the above articles he finds difficult of digestion and promoters of fermentation and putrefaction in the alimentary canal. Potatoes are easily and rapidly digested and consequently the "oxygenating capacity" of the body is overtaxed, so that the protein constituents of the food are not oxidized and assimilated, as they must be if a perfect state of health is to be maintained.

Finally, Porter sums up his conclusions as follows:

Animal food is more nearly a perfect nutritive than vegetable food.

Animal food is more easily digested and assimilated than vegetable, and therefore more economical to the system.

A perfect or ideal diet should comprise both animal and vegetable food.

The diet, consisting of the exact proper combination of animal and vegetable food, found to be the most perfect for the individual patient, combined with whatever medicinal and physical treatment deemed advisable, will often produce "marvelous" improvement in the patient.

No Milk in Summer Diarrhea.—In the treatment of babies affected with the infectious diarrheas of the summer season, milk has no place. Whether we are dealing with a milk infection or not, and usually we are, milk will still furnish a splendid culture medium for the bacteria still inhabiting the disturbed gastrointestinal tract.—J. H. McKee, in *Monthly Cyclopedia and Medical Bulletin.*

New and Nonofficial Remedies

SINCE THE PUBLICATION OF THE BOOK "NEW AND NONOFFICIAL REMEDIES, 1909," THE FOLLOWING ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK ARE ASKED FOR.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(Continued from page 1643)

SODIUM PERBORATE.—(See SECOND SUPPLEMENT to N. N. R., 1909.) Proprietary Preparation:

PEROGEN BATH—Oxygen Bath Salts. Perogen.—Perogen bath is a preparation consisting of a catalyzer and sodium perborate capable of yielding 10 per cent. of oxygen, the two substances being wrapped separately.

The catalyzer is a light yellow odorless powder, and is made by a method which is the subject of a patent application now pending. The oxygen contents may be determined by any of the well-known methods.

Actions and Uses.—The catalyzer is a medicinally indifferent substance. When the two substances are mixed with water the catalyzer causes the liberation of the available oxygen of the sodium perborate. The oxygen bath thus obtained is said usually to reduce blood pressure and the pulse rate to a much greater extent than the ordinary bath. It is claimed to have marked tranquilizing and somnifacient effects. It is said to be useful in cardiac affections with high vascular tension and excitement, neuroses, insomnia, chronic nephritis, and skin diseases in which hydrogen dioxide is indicated.

Dosage.—One bath daily up to 24 or 48, with occasional intermissions.

Manufactured by Morgenstern & Co., 59 Maiden Lane, New York. U. S. patent and trademark applied for.

METHYL CHLORIDE—Methylis Chloridum.—Methyl chloride, CH_3Cl, is the methyl ester of hydrochloric acid. It occurs, in the compressed state, as a colorless liquid, having an ethereal odor, and a sweet taste.

Methyl chloride is insoluble in water, more readily in alcohol, freely in ether and chloroform, and also in acetic acid. It should be neutral to litmus paper. At about —25° C. (—13° F.) it has a specific gravity of 0.991, and boils at about —21° C. (—5.8° F.). It burns in air with a greenish flame, though it is not highly inflammable. The neutral solution is not precipitated by solution of silver nitrate, nor is there any reaction with potassium iodide and starch paste. In the liquid condition it is a powerful refrigerating agent. At very low temperatures it forms with water a hydrate, $CH_3Cl,9H_2O$. It should not react alkaline to litmus (absence of ammonia and methylated ammonia—methylamine). It should not immediately form a precipitate with silver nitrate. On evaporating it should leave no residue and emit no odor of methylamine.

Action and Uses.—By its evaporation a temperature of —23° (—9.4° F.) is produced, while if evaporation be accelerated by means of a current of air a temperature of —55° (—67°F.) may easily be reached. On account of this property it is used as a local anesthetic in the form of a spray, but its use requires caution, since it is apt to produce blisters. The diluted vapor is said to be non-poisonous. Methyl chloride is said to be an efficient general anesthetic, which has practically no influence on the circulation, but fails to produce complete muscular relaxation. It is used as a general anesthetic mixed with ethyl chloride and ethyl bromide.

Dosage.—When sprayed on the skin the part should be partly protected by a thin layer of cotton wool. When used locally cotton wool soaked in liquid methyl chloride may be applied to the skin over the painful area, but care should be taken that blisters are not formed. In order to avoid this a mixture with ethyl chloride has been recommended.

(To be continued)

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[*For other information see second page following reading matter*]

SATURDAY, NOVEMBER 20, 1909

MEAT EXTRACTS AND BEEF JUICES

While the extreme importance of carefully planned dieting of patients has been recognized for centuries, it is only in comparatively recent years that this subject has been studied by methods as precise and logical as those that have been devoted to other great problems in medicine. At present, however, we have means of learning accurately many of the most fundamental facts regarding the nutritive value and the composition of foods. Therefore, in the increasingly successful struggle now in progress to put therapeutic methods on the same scientific plane as diagnostic methods, it is our duty to scrutinize foods—especially those that are particularly recommended for the invalid or sick—in the same judicial way that we do drugs and other measures. That is, we must form opinions, not on the basis of vague impressions of the apparent results of the use of foods, and especially not on the basis of statements of manufacturers or other interested parties, but primarily in accordance with their composition and the food value that can be determined from this. Investigations like the report of the Council on Pharmacy and Chemistry on medicinal foods, Winton's and Fetterolf's analyses of diabetic and similar foods, and other disinterested studies, already have shown us that with foods, as with drugs, we can find a limited number of proprietary articles that are what they are advertised to be, but unfortunately many more that are not. In some instances the facts are startling as compared with claims made—startling because these preparations have been widely employed in serious conditions, when misapprehension as to the nutritive value of the food used is likely to be highly dangerous.

In many respects the most astonishing report on such preparations is that which appears in the Department of Pharmacology in this issue, dealing with substances purporting to be beef-juice or meat-juice. With many physicians—and with many of the laity—the names of some of the preparations that the report deals with have been names to conjure with. Anything that lays claim to being the best part of good red beef sounds so nourishing that the name itself makes people feel fed. It is humiliating, but most enlightening, to physicians who have used such preparations to learn that these are not beef-juice or meat-juice at all. It is even more important to note the surprisingly low calorific value. Not only have these preparations been sold under names that have given them an exaggerated value, but their value under any name is so slight that we cannot escape the conviction that many persons must have been simply starved while, with firm faith in the reputed value of the extracts, the prostration and emaciation have been attributed to the disease instead of to the lack of nourishment in the "food." All the advertising arguments conceivable, all the specious claims that can be advanced, cannot change the fact that to give a patient a microscopic fraction of the amount of energy that he necessarily expends is starvation. It is really appalling to see the difference between the claims and the facts. One manufacturer claims that a tablespoonful of his preparation equals in value one hundred grams of raw meat; as a matter of fact it contains a little under four calories to the tablespoonful, while one hundred grams of meat, even when very lean, contain 125 or more calories. Another preparation, according to the advertisements, contains in two ounces the concentrated juice of four pounds of the best beef; actually it appears to contain absolutely no beef-juice and is merely a thin meat-extract.

Doubtless the manufacturers will argue that, no matter what analyses show, the extensive sale of their preparations proves their value; doubtless, too, there are physicians who will be willing to assert that they have derived good results from the use of these products. Scientifically considered, such arguments are of the *post hoc, ergo propter hoc* variety. Patients who have recovered when given preparations that are nutritively worthless have recovered in spite of, and not because of, the "food" administered—or because semistarvation was indicated in these cases. Not only laymen, but even some physicians, have not yet divorced themselves from those medieval methods of thought which credit any artificial means of treating disease, be it ever so absurd, with results that are more rationally attributable to the *vis medicatrix naturæ*. This fallacy is nowhere more evident than in the therapeutics of so-called medicinal foods. Verily, strange therapeutic idols have been worshiped by those who have used such preparations, but the day of false gods is drawing to its close. With further contributions like the one which appears in this issue, we may hope that vagueness and uncertainty in dietetics will give way to rationality and precision.

THE PATHOGENESIS OF SPONTANEOUS CEREBRAL HEMORRHAGE

Since the classical article of Charcot and Bouchard in 1868 it has been common knowledge that cerebral hemorrhage is associated with the presence of minute aneurisms in the smaller, intracerebral arteries, and that the hemorrhage is presumably the result of the giving way of these aneurismal dilatations. In sixty cases of cerebral apoplexy these authors found miliary aneurisms, from two to hundreds in each brain, arising on arteries of a diameter of 0.03 to 0.25 millimeter, and established by their research the significance of the aneurisms in the pathogenesis of cerebral hemorrhage. Earlier investigations, however, had already pointed out the existence of these aneurisms, Morgagni himself in 1761 having stated that rupture of the cerebral arteries was a consequence of their widening, whereby the walls became thinned; but it was not until 1859 that the actual source of a hemorrhagic extravasation in the brain was detected in a ruptured miliary aneurism by Gull. The reason for this tendency of the small cerebral arteries to undergo aneurismal dilatation and rupture seems to be twofold: In the first place, these vessels lack a firm external support because of the softness of the brain tissue and the delicate structure of the adventitia surrounding them; in the second place, as Mendel demonstrated in 1891, the blood pressure in the arteries of the basal ganglia is greater than in the other parts of the brain.

Just what changes take place in the vessels during the formation of the aneurisms, and the relative importance of aneurism formation and rupture of undilated vessels as the source of cerebral hemorrhages, are matters concerning which there has not been agreement, and there is also dispute as to whether the dilatations are true or false aneurisms. In an excellent paper, from which the preceding historical review has been abstracted, A. G. Ellis[1] reports an extensive reinvestigation of these old problems by modern methods. In thirty-one cases of cerebral hemorrhage he found macroscopic aneurisms, varying in size from 0.5 to 4 millimeters in diameter, and in four cases ruptured aneurismal sacs were found. Histologic study of the vessels and aneurisms showed that the primary lesion is in the intima, the elastica being primarily at fault as in arteriosclerosis of vessels other than those of the brain. The damaged intima frequently ruptures, and blood forces its way between the coats of the vessel, producing dissecting aneurisms which later, through destruction of the remnants of the vessel wall still surrounding the blood, become converted into false aneurisms bounded by fibrin and altered brain tissue. False aneurisms are also formed by rupture of a vessel after degeneration of media and adventitia has followed the primary degeneration of the intima. In any case, the aneurismal dilatations found on the cerebral vessels are false aneurisms, and not true aneurisms surrounded by one or more layers of the vessel wall; and also the primary vascular lesions are intimal rather than in the media or adventitia as has been contended.

Ellis believes that cerebral hemorrhage does not always come from rupture of aneurisms, for sometimes the sclerosed vessels are found to have ruptured directly without previous dilatation. It is probable, however, that the more usual cause of a spontaneous cerebral hemorrhage is rupture of a false aneurism; and it also seems that the large hemorrhages with great destruction of brain tissue are usually from this cause, since in this way the entire current of blood may suddenly enter the brain substance.

HEROES, THOUGH THEY DID ONLY THEIR DUTY

From the Illinois coal-fields comes a story of horror and disaster. In the lower levels of the St. Paul mine at Cherry nearly four hundred miners were at work. An alarm of fire was given and they rushed for the shaft, only to find their way to safety barred by a wall of flames. At the smoking pit mouth above, the mine foreman called for volunteers to go down into the burning mine and bring out the survivors. Fourteen men stepped forward, at their head the company's physician, Dr. Lyston D. Howe. Of this brave band, twelve lost their lives trying to save their comrades. Dr. Howe and one miner alone escaped. Let the newspaper correspondent tell the rest of the story:

"Standing out above all the rest is the story of Dr. L. D. Howe, the St. Paul Company's physician, who was the first rescuer to enter the mine. Seven times before the other rescuers began to go down into the burning shaft, this young physician went down alone into the flaming pit and each time he brought to the surface his quota of saved. Twenty-five miners owe their lives to him. To-day his hands are badly burned, but he shows no other scars. When asked this afternoon to describe his experiences, he merely shrugged his broad shoulders and said, 'I could not have done anything else than I did. It is not worth talking about. Besides, I am too busy to talk to-day.'"

The following item appears in this week's letter from our London correspondent: "In the early morning an explosion occurred in the Darran Colliery, South Wales, before the workers on the night shift had left. The ordinary approach to the mine was completely blocked, and the only access was through the shaft of another pit four miles away. A relief party, accompanied by Dr. Turner, the colliery surgeon, descended into the pit and endeavored to reach the other shaft. One after another they were overcome by the choke-damp and five died. The physician had a narrow escape. He repeatedly risked his life in leading the relief party and at last collapsed. His companions endeavored to rescue him, but were so overcome by the choke-damp that they had to abandon him. After a time they were able to return and found him lying in the roadway, still alive. He was carried to a place of safety and oxygen was administered. He was then taken in a comatose state to the Cardiff Infirmary."

All honor to these brave physicians who risked their lives to save others. While they did only their duty, they are heroes none the less. No better example of the true physician could be found than the young mine surgeon who only did his duty and was too busy next day to talk about it.

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[1] The Pathogenesis of Spontaneous Cerebral Hemorrhage, Proceedings of the Philadelphia Path. Soc., 1909.

THE ENZYME TREATMENT OF CANCER

The treatment of cancer by injection of preparations containing pancreatic enzymes, as proposed by Dr. John Beard, of Edinburgh, about four years ago, excited so much interest and comment at the outset that it is hardly necessary to recount its principles or objects. It will be remembered that the treatment was based on an embryologic hypothesis as to the part played by the pancreas in controlling cell growth (a hypothesis which, to say the least, has not been generally accepted by embryologists), and all will recall the sensational manner in which the new treatment was exploited in lay journals. To anyone acquainted with the biology of cancer cells and the properties of enzymes the entire proposition appeared unpromising, but none the less there were not a few practitioners who seemed to see good results accruing from the treatment, and some were carried to extremes of enthusiasm. Taking an unprejudiced view of the situation, however, it seemed possible that the trypsin and amylopsin preparations might have some local effects equivalent to those of mild escharotics, and without their disadvantages, but any specific curative effect, such as was anticipated by Beard, that should lead to "the conquest of cancer" was not to be expected or hoped for.

Four years' experience with the treatment has given opportunity for its real value to be established and for the permanence of the results which at first aroused enthusiasm to be finally decided. More than one hundred articles have been written on the subject, and of three thousand physicians interrogated by the Committee on Scientific Research of the New York Skin and Cancer Hospital, about five hundred reported that they had tried the new method. The originator and advocates of the treatment, therefore, cannot complain of lack of investigation and attention on the part of the profession, and if the unfavorable verdict which has generally been reached is ascribed to lack of experience, care or thoroughness by the users, this criticism cannot well be applied to the report recently published by Dr. W. S. Bainbridge, the secretary of the committee mentioned above.[1] In this report are detailed the results of the treatment of cancer in one hundred cases by the method advocated by Beard, carried out in its full details, with careful study not only of the patients' general condition, but also of the blood, urine, and the tumors themselves. The treatment appears to have been given a most impartial and thorough trial, so that there seems little room to take exception to the conclusion reached, namely, that "the enzyme treatment does not cure cancer." It is found that the local treatment of the ulcerating surface and the general régime advocated by Beard have a favorable influence on the local and general condition of the patient, but there is nothing in the nature of a specific cure of the cancer growth, or even of the prevention of metastasis or recurrence; while at times the injection of trypsin may cause dangerous injury, and often it is unbearably painful. Perhaps the most important positive result is described in the author's retrospect in the following words: "Looking back on the work of the last three years, the most important lesson to be drawn from the enzyme treatment of cancer is that the patient is a human being who, while suffering from cancer, it is true, may at the same time be the subject of any of the other ills to which flesh is heir, and who doubly deserves to be treated with all the careful scientific attention which modern medicine and surgery command. By building up the nutrition, aiding the impaired function of elimination, treating complications, giving the patient a better mental as well as physical atmosphere—in other words, treating the patient and not the 'cancer case'—suffering can be wonderfully ameliorated and life, in many instances, prolonged in comparative comfort for months and even years." But this is a long way from a specific cure—from "the conquest of cancer"—more's the pity.

HYDROTHERAPY

While it cannot be said that qualified medical men ignore the therapeutic use of water (unless here and there some isolated individual, like one who a few years ago objected to the practice of bathing as insanitary), it can safely be admitted that most physicians do not habitually employ hydrotherapy in many ways in which it might be beneficial to their patients. Many difficulties stand in the way as regards the mass of the profession. A complete hydrotherapeutic outfit is beyond the reach of the average physician, and the means for using the simple domestic methods are not always available in the homes of the poor. The exploiters of hydrotherapeutic methods in our cities, and even in some of the so-called water-cures, often have not the full confidence of the profession. In some of the best hydrotherapeutic establishments one cannot always be sure that the cure is applied in a thoroughly scientific instead of an empirical, routine way. The associations of special therapeutic institutions are not always the best, and sometimes there is a justified suspicion of quackery in the mind of the physician who might otherwise contemplate sending patients there. There are not many places to which physicians can send a patient and assure him that he will receive the scientific aid that he requires and which he has a right to expect. While some resorts can be conscientiously recommended, they are often beyond the means of a large class of worthy people. Hence the need, especially in cities, of institutions where a physician can prescribe and in a measure oversee the treatment of his patients, feeling sure that nothing will be done for which he cannot himself assume the responsibility. Even in the city of Boston there was not, up to within a very few years, according to Dr. Pratt's article in the present issue, a single place where one could have a therapeutic douche, a scientific wet-sheet rub, or a carbon dioxid bath given by a man or woman familiar with the proper hydrotherapeutic methods. The history given by Dr. Pratt of the foundation, equipment, etc., of the Boston Medical Baths illustrates what might be done in other cities, where similar institutions could be made of great value, not only for the scientific treatment of persons who cannot for financial or business reasons avail themselves of the well-known establishments in this country and abroad, but also for the educational effect on the public and even on the medical profession. It would afford an opportunity for the individual treatment needed under the direction of the physician who best knows the case and who has the confidence of the patient. There is no conscientious therapeutist who does not wish to give his patients every possible opportunity to use all the means that may benefit them. The application of water in its various forms and in the ways approved by experience is one of these.

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[1] Bainbridge, W. S.: The Enzyme tific Report on Investigations with of Cancer. No. 1. Published with the on Scientific Research of the New York

THE VALUE OF NASAL EXAMINATION IN THE DIAGNOSIS OF LEPROSY

Several years ago, Sticker advanced the claim that the initial lesion in leprosy is situated on the septum of the nose. Were this the case, the detection of incipient cases of leprosy would become a comparatively easy matter. Impressed with the possible practical value of nasal examination in the diagnosis of leprosy, Brinckerhoff and Moore[1] in Hawaii determined to gather further data in regard to the question of this alleged initial lesion of leprosy. Inasmuch as most of the previous investigators based their conclusions on results obtained from the examination of patients in whom leprosy was relatively advanced and in whom it would be exceedingly difficult if not impossible to determine the primary lesion, Brinckerhoff and Moore examined not only lepers in the early stages for primary lesion on the nasal septum, but especially persons not known to be lepers but among whom it was reasonable to expect that a considerable number of as yet unrecognized instances of the disease would exist. Certain institutions in Hawaii offer exceptionally favorable opportunities for the discovery of cases of leprosy in the earliest stages if the first symptom of the disease actually is an ulcer on the nasal septum. Without discussion of details, suffice it to say that the Hawaiian investigators carefully examined the nasal septum and nasal secretion of 407 suitable persons without finding as many cases of leprosy as expected from the statistical data and on the assumption that this method would be of distinct value in the diagnosis of the disease in its incipiency. Hence they feel decidedly doubtful as to the value of nasal examination for the early diagnosis in all cases of leprosy, and in this conclusion they are supported by the results of their examinations of known cases of leprosy. In four of five cases of incipient leprosy, inspection of the nasal septum and bacteriologic examination of the nasal secretion failed to detect any evidence of leprosy either in the form of actual lesion or in the presence of lepra bacilli in the secretion. In the fifth case they found a single large mononuclear cell containing unmistakable lepra bacilli. On the other hand, in cases of considerable duration they found septal lesions and bacilli in the secretions to be the rule. In one case, in a dispensary patient, in which full history and physical examination could not be secured, a considerable number of lepra bacilli were present in the nasal secretion—an example of the value of routine examination of the nose in detection of dangerous cases of leprosy in a clinic frequented by races with a high incidence of this disease. Brinckerhoff and Moore consequently assign a certain value to nasal examination in the detection of leprosy, even if it does not reveal all cases of the disease, as would be expected if the initial lesion, as once claimed, occurs on the septum of the nose.

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[1] U. S. Public Health and Marine-Hospital Service, Studies on Leprosy, 1909, No. 4.

Medical News

ILLINOIS

Money for Hospital.—Evanston Hospital has received an anonymous gift of $25,000. The money has been applied to the endowment fund, which now amounts to $86,000.

No Provision for Pay of Experts.—The Illinois Occupational Disease Commission, which had made arrangements for an exhaustive study of the conditions in the factories of Illinois, finds its hands tied because the bill enacted by the state legislature, which provides for an appropriation of $15,000, fails to specify expert and medical aid in its list of the purposes for which the money may be used.

Personal.—Dr. Arthur C. McIntyre and family, Troy Grove, have returned from Europe.——Dr. Edwin J. Gause, Unity, county commissioner-elect of Alexander county, took the oath of office November 5.——Dr. Charles B. Fry, one of the oldest practitioners of Mattoon and local surgeon for many years of the Illinois Central and Big Four railroads, announces that he will give up the active practice of his profession.

Elections.—At the annual meeting of the Southern Illinois Medical Society, held in East St. Louis, November 5, the following officers were elected: President, Dr. Oscar B. Ormsby, Murphysboro; vice-presidents, Drs. Edward W. Fiegenbaum, Edwardsville, and Andrew Hall, Mount Vernon; secretary, Dr. Charles W. Lilie, East St. Louis; assistant secretary, Dr. Alonzo B. Capel, Shawneetown, and treasurer, Dr. H. E. Telford, Centralia. The next meeting is to be held in Centralia.——At the eighty-ninth semi-annual meeting of the Fox River Valley Medical Society, held in Aurora, November 9, Dr. Edward H. Abbott, Elgin, was elected president; Dr. C. H. Evans, Aurora, vice-president, and Dr. William H. Schwingel, Aurora, secretary-treasurer.——The Kewanee Physicians' Club, at its annual meeting, November 4, elected the following officers: President, Dr. Peter J. McDermott; vice-president, Dr. H. Nelson Heflin, and secretary-treasurer, Dr. Gideon H. Hoffman.

Chicago

Physicians Protest.—An ordinance prohibits vehicles from remaining on downtown streets without attendants for more than an hour, in order to avoid more congestion of already crowded streets. The council of the Chicago Medical Society, at its meeting, November 9, protested against the law. The physicians want the right to leave automobiles on the street while they are in their offices.

Out-Door School.—A plea for the establishment of a permanent large outdoor school for tuberculous children is made in the report issued November 11 by the Chicago Tuberculosis Institute. Great good is predicted from the out-door school which is to be held on the roof of the Mary Crane Nursery, Ewing street, by the United Charities, supported by the trustees of the Elizabeth McCormack fund.

Antitoxin.—The Memorial Institute and the Chicago druggists, with the assistance of the Department of Health, have entered into arrangements whereby the retail price of diphtheria antitoxin, after November 15, will be, 1,000 units, 60 cents; 3,000 units, $1.10, and 5,000 units $1.50. The previous prices were, respectively, $2, $5, and $7.50. The department urges those able to pay these reasonable prices to do so and to leave the state supply of free antitoxin for poor people who are unable to pay anything for it.

MARYLAND

Memorials.—In the improvements now being made at the Hospital for the Women of Maryland, Baltimore, there will be memorials to Drs. William T. Howard, H. P. C. Wilson and J. E. Atkinson, all of whom were formerly members of the staff, and the two first, founders of the institution.

Loving-Cup Given.—The surgical staff of the Baltimore Eye, Ear and Throat Charity Hospital recently gave a dinner in honor of Dr. Samuel Theobald, one of the founders of the hospital, and a member of the staff since 1882. A loving-cup was presented Dr. Theobald by Hon. Charles J. Bonaparte of the board of managers.

Personal.—Dr. Charles H. Rose, Cordova, has been elected a member of the house of delegates.——Dr. Joshua W. Hering, Westminster, comptroller of the state, was given the honorary degree of LL.D. on academy day at the University of Maryland, November 11.——Dr. Frederick H. Baetjer has been appointed associate in actinography, Dr. H. C. Thatcher assistant to Professor Thayer, and Dr. J. T. Sample assistant to Professor Barker, in Johns Hopkins Hospital.

Hope to Abolish Cocain Evil.—Baltimore feels that it has provided a really effective weapon in its endeavor to abolish the cocain evil; this has been done by the Swan ordinance, passed by the city council, the legality of which was upheld by the Maryland Court of Appeals, at Annapolis, November 12. It is said that the dealers in cocain have been making 200 per cent. profit. Hitherto these individuals have had an option of paying a fine or imprisonment; hereafter imprisonment is to be required and, further, even to have the drug in one's possession, unless on prescription of a regular physician, is to be evidence of guilt.

MASSACHUSETTS

Physicians' Building in Worcester.—Plans are being prepared for a twelve-story office building in the center of Worcester to cost $500,000 to be devoted to the use of physicians, dentists and druggists.

Personal.—Dr. Florence A. Sullivan has been elected a member of the Haverhill Board of Health.——Dr. Wilder Tileston, Boston, has been appointed assistant professor of medicine in Yale Medical School and has moved to New Haven.——Dr. George B. Sargent has been reelected secretary-treasurer of the Lawrence Medical Club.——At the annual meeting of the Massachusetts Charitable Eye and Ear Infirmary, Boston, Dr. George B. Shattuck was elected president.——Dr. Ephraim Cutter, West Falmouth, writes that he has been appointed delegate to the 1910 convention for the Revision of the U. S. Pharmacopeia. This reminds him that it will be fifty years since he went before.

NEW YORK

New York City

Gift to Lawrence Hospital.—This institution, at Bronxville, was erected by W. V. Lawrence at a cost of $125,000 and opened last June. Mr. Lawrence has now given an additional $150,000, $50,000 of which is for the home for nurses, and $100,000 for an endowment fund for current expenses.

Montefiore Home Will Move.—At the annual meeting of the trustees of this institution it was announced that the home would soon be moved to a more favorable site up town, the present quarters not being large enough. The treasurer's report showed expenditures of $180,000 during the last year and donations of about the same amount.

Hudson-Fulton Accidents.—Reports received by the Public Service Commission on the local transportation service during the crowded period of the Hudson-Fulton celebration show that there were no fatal accidents. It is estimated that the elevated and surface cars carried nearly six millions a day during that time without a single fatal accident.

Gift to College.—William D. Sloane, who has already done much for the College of Physicians and Surgeons, has given $150.000 which is to be used for the erection of a seven-story addition to the Sloane Maternity Hospital. The new building will enable the student to receive practical instruction in all phases of obstetrics and gynecology in the same building.

Personal.—In recognition of the services rendered the Roman Catholic Church by his writings and lectures, Dr. James J. Walsh has had the decoration of St. Gregory conferred on him by Pope Pius X.——Dr. A. S. Dair, while racing, lost control of his motor cycle, and was thrown down an embankment, sustaining severe injuries.——Dr. Carlos F. MacDonald, while returning from New York to his sanitarium at Central Valley, was thrown from his automobile and narrowly escaped death.

House Staff Resigns.—The house staff of the Washington Heights Hospital has resigned on account of Dr. Herman S. Jacobs, house surgeon, refusing to sign a paper certifying that a client of an insurance company had died. unless he, Dr. Jacobs, received the usual fee for his services. The superintendent insisted that the money go to the hospital fund, and Dr. Jacobs refused to sign the blank, and was reported to the chairman of the medical board, who suspended him. Believing Dr. Jacobs to be in the right, the staff, consisting of Dr. Aaron B. Cohen, senior ambulance surgeon, and Dr. David Linetsky, pathologist, decided to resign unless he was taken back. The resignations were accepted, and the staff left the hospital November 7.

OHIO

School in Tuberculosis Sanatorium.—The first school in a tuberculosis sanatorium is said to have been organized at the Franklin County Hospital, Columbus, to look after the mental welfare of ten patients of school age now under the care of the institution.

Staff Resigns.—The mmebers of the medical and surgical staff of the Mahoning Valley Hospital, Youngstown, with one exception, have sent in their resignations. The reason assigned for this is that "there seems to be lack of proper persons to take care of the sick. There are no facilities for taking care of accident or emergency cases."

State Should Supply Antitoxin.—The State Board of Health, at its meeting in Cincinnati, October 13, adopted a resolution that the state supply diphtheria antitoxin free, wherever it is needed. The board also requested the legislature to enact a law providing for the appointment of twelve medical inspectors of contagious diseases, and making medical examination compulsory in city schools, and optional in township and village schools.

Personal.—Dr. William A. Pitzele has been appointed a member of and elected president of the Board of Health of Lorain.——Dr. John S. Cherrington, Logan, has returned from Europe.——Dr. William H. Perry, Van Wert, sailed for Europe, November 17.——Dr. Edgar C. Davis, resident physician at St. Luke's Hospital, Cleveland, was operated on recently for appendicitis.——Dr. Clarence S. Ordway, Toledo, has given a contract for the immediate erection of an eighteen-room hospital on his property on the East Side.

A New Charity.—The Toledo Lying-in and Babies' Dispensary was opened October 26, under the direction of a board of governors, the medical members of which are Drs. Julius H. Jacobson and Park L. Myers. Dr. George B. Booth has been appointed superintendent of the dispensary and placed in charge of the maternity department, and Dr. Herbert E. Smead has been placed in charge of the babies' department. The dispensary is designed to provide nursing for patients in their own homes by visiting nurses, and to provide medical attention, medicine and food to infants and young children.

PENNSYLVANIA

Carnegie Gives Land.—Mr. Andrew Carnegie has given to the State of Pennsylvania 450 acres of land at Cresson for a tuberculosis sanitarium.

Favors Aid to Marine-Hospital Officers.—The Commercial Exchange, through its board of directors, adopted a resolution, November 11, requesting the Pennsylvania delegation in Congress to support proposed legislation in aid of the United States Public Health and Marine-Hospital Service. The measure is intended to provide more adequate remuneration for the officers of that service and for the payment of a salary to officers retired at the age limit or for physical disqualifications.

Philadelphia

Doctors' Charity Chooses Officers.—At the annual meeting of the Aid Association of the Philadelphia County Medical Society, held November 8, the following officers were elected: President, Dr. James B. Walker; vice-president, Dr. Jacob Shellenberger; secretary, Dr. Lewis H. Adler; treasurer, Dr. John B. Turner, and directors, Drs. Roland G. Curtin, Samuel W. Morton and Alexander R. Craig. The association was formed to give aid to the needy members of the county medical society and their families and other physicians in extraordinary cases. Its work is purely benevolent and the names of the beneficiaries are not known to the other physicians.

Personal.—Dr. S. Weir Mitchell has been elected president of the St. Andrew Society of Philadelphia.——Dr. I. Newton Snively, who underwent operation for abdominal abscess, November 9, is improving.——Dr. William T. Pride, Jr., has been appointed professor of pathology in the College of Physicians and Surgeons, Memphis, Tenn.——Dr. Albert G. B. Hinkle is recovering from a long and serious illness.——Dr. James K. Young was appointed associate professor of orthopedic surgery in the University of Pennsylvania faculty, November 9.——Dr. Walter L. Pyle gave a reception, November 13, to many of the physicians of the country, who had come to attend the dedication exercises of the new building of the College of Physicians and Surgeons.

Dedication of the New Hall of the College of Physicians of Philadelphia

The new home of the College of Physicians of Philadelphia was dedicated with fitting ceremonies, November 10 and 11. This society, organized January 2, 1787, is the oldest medical organization (not a state society) in the United States.

The society is a scientific and not a teaching body. Until recently the number of its fellows has been very small. It has never aimed to include the rank and file of the profession, but has had a selected fellowship, which even now numbers only 439 fellows, 40 associate fellows, of whom 11 are from Great Britain, and 4 corresponding members.

LARGE MEDICAL LIBRARY

The library of the college, with the exception of the Surgeon-General's Library at Washington, is stated to be the largest medical library in the world. It contains, excluding duplicates, almost one hundred thousand volumes. For the last few years it has increased at the rate of more than two thousand new volumes a year. The college contains some very rare material. It possesses one of the six copies of the first edition of Harvey's "De Motu Cordis et Sanguinis" to be found in the United States and has also the still rarer final leaf containing the errata. Among the many curiosities are a lock of Jenner's hair, Laennec's stethoscope, a set of Perkin's "tractors" and the knocker from the door of Ephraim McDowell. The college also contains the museum of the late Thomas D. Mutter, which was presented to the institution in 1856. This covers a floor space of 3,500 square feet and is provided with several galleries. This museum has an endowment of $30,000 to provide for its care and increase, and for the annual "Mutter Lecture."

THE NEW BUILDING

The new building, with furniture and fixtures, has been erected at a cost of $400,000, of which $100,000 was presented by Mr. Andrew Carnegie. The structure is a modern two-story fire-proof building of steel construction, with brick walls and limestone trimmings. It is 108 by 150 feet, situated on a lot 130 by 184 feet and is surrounded by three streets, thus assuring light and protection from fire on all four sides. The first floor contains the executive offices and is provided with two large lecture rooms with a capacity for one hundred persons, known as the Thomas Cadwalader Room and William Thompson Room.

The second floor contains a large auditorium capable of seating 500 persons. This room was furnished by the friends of Dr. S. Weir Mitchell and is known as Mitchell Hall. Several other memorial rooms are provided, and all, except one, have been named after deceased fellows. Special provision is made for fellows who are engaged in prolonged research work by a dozen small private rooms, in which they may study, and on leaving the room lock the door. This is a saving of time and trouble both to the student and library officials, and has the advantage of freedom from all interruption.

LIBRARY AND READING ROOM

The windows of the library are provided with wire glass in metal frames and there is further protection from fire by rolling steel fire shutters, which drop automatically at a certain temperature. The library is also cut off from the rest of the building by fire doors. Space in the library has been provided for 300,000 volumes and ample provision has been made for large future extension whenever necessary. A large reading room is provided, which will accommodate fifty readers, and the journal room, opposite, contains accommodation for fifty additional readers. There are 850 medical journals on file in this room. Six shelves without partitions run around the entire room, three of which are horizontal. Above each horizontal shelf there is another shelf inclined about forty-five degrees. On the inclined shelf the latest number of each journal is placed, while immediately below it, on the horizontal shelf, are all loose preceding numbers of the same journal, awaiting binding as soon as the volume is completed. The library is open to all the non-medical public as well as to the entire medical public of whatever school.

ACADEMICAL PROCESSION

The fellows and guests assembled and proceeded to the entrance to the new building, where the presentation was made by Dr. William J. Taylor, secretary of the building committee. The hall was accepted on behalf of the president and officers and in the name of the fellows of the College of Physicians of Philadelphia by the vice-president, Dr. George E. de Schweinitz.

THE GUESTS

Dr. James Tyson, president, introduced the visiting guests, who spoke, in part, as follows:

JOHN SHAW BILLINGS, M.D., representing the New York Public Library:—"I offer [illegible] only of the New York Public Library, but [illegible] public libraries, on your success in obtaining and properly housing this collection of books which is perhaps the most complete in the world. It has an added value in that it contains the books of Dr. John Stockton Hough. I speak also as a delegate of the Carnegie Institute of Washington and present congratulations from that body."

CHARLES LOOMIS DANA, M.D., representing the Academy of Medicine of New York:—"In bringing the message of fraternal greetings and congratulations on your present great feat, I speak not alone as a representative of a kindred institution, but with a note of real personal feeling, for I have experienced the hospitality of this college and know its worth and work. The New York Academy of Medicine is the junior of this college by sixty years. It owes its existence to the widows and orphans of medical men and shows how the poor and humble may be an inspiration to mighty things. Through it New York first organized a board of health and the academy has since its beginning aided nearly every measure for public health and medical science. In six decades our membership has grown from 184 to over a thousand and a waiting list exists."

REGINALD HEBER FITZ, M.D., spoke for the Boston Medical Library:—"The College of Physicians of Philadelphia and the Boston Medical Library meet on common ground in their effort to take their place among those seeking nothing for themselves but all for the race."

WILLIAM SYDNEY THAYER, M.D., representing the Medico-Chirurgical Faculty of Maryland:—"I present congratulations, not perhaps of a sister society, but of a child, for a large number of our founders gained inspiration from members of this venerable institution, and we in Maryland have ever sought refreshment from the quickening current which has flowed from the lips of your students, philosophers and poets. May this institution ever serve to broaden the horizon of the physician, to stimulate justice, liberality, tolerance, and bring him nearer to his fellow man, giving to the world the highest usefulness, counsel, and advice."

FREDERICK P. HENRY, M.D., honorary librarian, Library of the College of Physicians of Philadelphia:—"Our library is in the front rank of the medical libraries of the world and second to none as a working library. I would call particular attention to the numerous small rooms for special research in which the student may have absolute privacy. The books are a collection of animate objects which have not only stimulated but compelled progress. They forced us out of our home in the Mercantile Library in 1854 and again they forced us out of the old picture house in the Pennsylvania Hospital grounds in 1863, and finally they drove us, with metaphorical whips and scourges, out of our last home and forced us like a swarm of bees into this hive of learning. Like a swarm of bees also there was needed a metallic sound to make us settle and gold has been literally poured out at our feet. The bookstacks have space for 300,000 books with ample room for extension, so that the youngest member need not anticipate the expense of another removal during his life time. I cannot offer you what you already possess, the freedom of this great library, but I can congratulate you and ourselves on the fact that it is contained in the finest building of its kind in either hemisphere and that the jewel is worthy of its casket."

CONFERRING OF ASSOCIATE FELLOWSHIPS

ARCHIBALD BYRON MACALLUM, M.A., M.B., Ph.D., Sc.D., LL.D., F.R.S., was presented by Albert Philson Brubaker, M.D., who said in part that for his services to the cause of higher education and for the supreme worth of his personal character Dr. Macallum had been honored in large measure by universities and scientific associations at home and abroad, for which reasons the fellows of the College of Physicians desired to express their appreciation by conferring on Professor Macallum the title of associate fellow.

To the presentation Dr. Tyson responded and in like manner to the subsequent presentations: "Selected from among those eminent scientists of the country by unanimous vote of the council, confirmed by a like vote of the college, you have been made an associate fellow of the College of Physicians of Philadelphia, in evidence of which I present to you the certificate of the college, signed by the president, vice president, the secretary and treasurer and the censors of the college."

OLIVER FAIRFIELD WADSWORTH, M.D., was presented by George E. de Schweinitz, M.D., as "A pioneer in the early medical work of the country; a teacher who has sent forth students fully equipped; a clinician distinguished for accuracy and keenness of observation, an ophthalmologist, physician and surgeon who has upheld the standard of the profession."

EDWARD GAMALIEL JANEWAY, M.D., LL.D., was presented by James C. Wilson, M.D., as a "master clinician, distinguished writer, comprehensive teacher, wise consultant, and courteous gentleman."

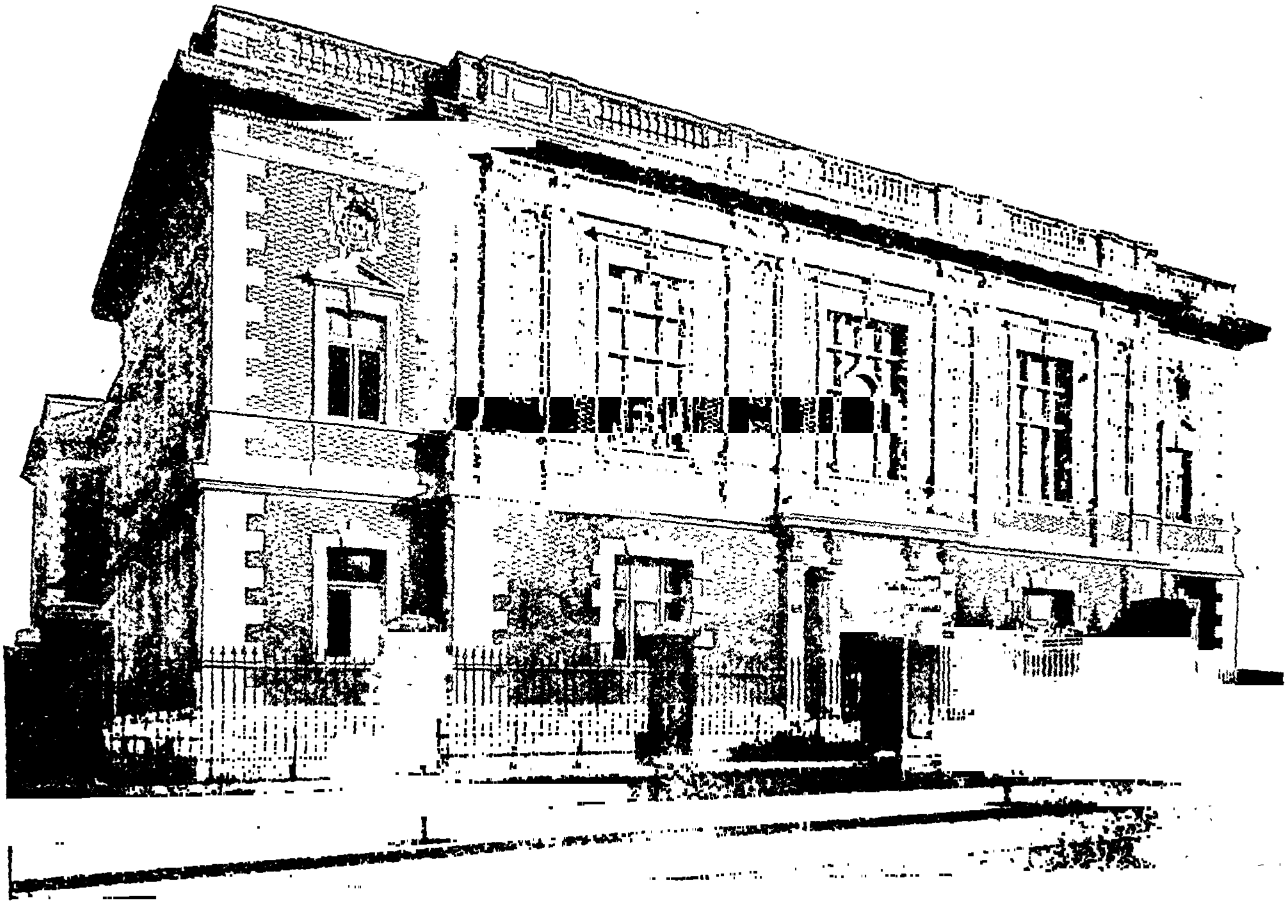
CHARLES LOOMIS DANA, M.D., was presented by Charles K. Mills, M.D.:—"When the College of Physicians of Philadelphia selects for a special honor we are assured that the choice is determined by exceptional merit. Such merit is possessed by the candidate whom I have the honor to present. Born among the rugged hills of New England, he has by a life of ever-increasing distinction made faithful return for his inheritance of capacity. His success in neurology, his chosen department of medicine, was assured from the outset. He is the author of one of the best text-books on neurology and psychiatry ever issued from an American press."

FRANK BILLINGS, M.D., was presented by John H. Musser, M.D., who said in part:—"Beloved physician of patriotic vision, skilful in interpretation, masterful in treatment, scientist, wise and earnest seeker of truth, you have emblazoned the path of many young men who, inspired by your conceptions, have been earnest workers in medical science. As president of the State Board of Charities of Illinois you have shattered the political bonds of the various institutions under your care and have brought to the inmates of the institutions careful management and scientific treatment. Recognizing the commanding features of your career the fellows of the College of Physicians have by one voice asked that you be presented to the president and receive the certificate of associate fellowship, knowing full well that you will honor it far more than it can ever honor you."

GEORGE WASHINGTON CRILE, M.D., was presented by Dr. William L. Rodman:—"The candidate whom I present has placed new paths in surgery and has compelled a gratified profession to acknowledge him as a leader. Perhaps his most noteworthy publication was on hemorrhage and transfusion. Busy as he must have been in the preparation of such a monograph he has found time to devise new surgical operative instruments and to contribute largely to current medical literature."

FRANKLIN PAINE MALL, M.D., was presented by George A. Piersol, M.D.:—"In bringing about the larger recognition of anatomy in surgery Dr. Mall has rendered conspicuous service. During his career as educator he has striven to arouse a love for research, and largely through his efforts this country now possesses two journals of acknowledged merit devoted exclusively to anatomy."

Cablegram congratulations were received from the Royal College of Surgeons of Edinburgh, the College of Surgeons of England, and from William Osler. A set of resolutions came from the Boston Medical Library and letters from two fellows, Drs. J. Cheston Morris and Horatio C. Wood, and from the representative of the library of the Surgeon-General's office, U. S. Army, Dr. Robert Fletcher, who were unable to be present.



THE NEW BUILDING OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA

DEDICATORY ADDRESS

The president, JAMES TYSON, M.D., delivered the dedicatory address:—"Of the three occupations of men which are dignified by the title of profession—namely, the ministry, the law, and medicine, that of medicine has been especially characterized by a desire on the part of its members to unite for mutual improvement. The first effort toward organized medical societies in the English colonies of North America appears to have been in Boston in 1735. The College of Physicians was organized in 1787 and while the third of the medical societies organized in Philadelphia was the tenth of American societies, so far as can be learned it is the oldest in existence of American societies which is not a state organization. As early as 1767 Dr. John Morgan began to agitate the subject of a College of Physicians, but was rather severely sat on by one of the proprietors, Thomas Penn. As a result the charter was refused and the project abandoned for the time being. On Jan. 2, 1787, however, the first meeting after its full organization was held. Dr. John Redman was the first president and held office for eighteen years. The vice-president was Dr. John Jones, great grandson of Dr. Thomas Wynne, who came over with Penn in the ship *Welcome*. The constitution provided that the officers should be chosen annually, and this practice continues to the present day. The first paper read before the college was by Dr. Rush at the second meeting, Feb. 8, 1787, on 'The Means of Promoting Medical Knowledge.' The college early assumed a guardianship over the health, safety, and even morals of the community.

"The circumstance which made the first decade in the life of the college the most stirring and interesting in its history was the presence of yellow fever. On Aug. 25, 1793, a special meeting was held 'to consider what steps the college should take consistently with duty to their fellow citizens in connection with the prevalence of a fever of very alarming nature in some parts of the city.' Directions for preventing the further progress of the fever with comments on the inefficiency if not the danger of fires kindled as a means of checking the progress of the fever and placing more dependence on the burning of gunpowder were promptly sent to the citizens.

"It was further stated that 'the benefits of vinegar and camphire are confined chiefly to infected rooms, and they cannot be used too frequently on handkerchiefs or in smelling bottles by persons whose duty calls on them to visit or attend the sick.' On Nov. 26, 1793, in answer to the inquiry from Governor Mifflin to President Redman whether or not yellow fever was an imported disease a reply was adopted to the effect that the fever was imported in vessels about the middle of July. Cleanliness of the streets, the use of gunpowder as a disinfectant, and of slacked lime in privy wells was recommended. In 1798 when the fever again broke out as a result of a special meeting of the college a committee was appointed to wait on the Board of Health to recommend the removal of all families between Walnut and Spruce Streets and the east side of Front and the river; also to remove the shipping between Walnut and Spruce Streets to a proper distance. The fever prevailed with intermissions and remissions from 1793 to 1798. Two founders of the college died of it and many more physicians were very ill. At one time only three were able to do duty outside their own houses.

"In 1798 was organized the American Academy of Medicine of Philadelphia. It is said to have been organized with a view to the study of yellow fever, but it was also in evident opposition to the College of Physicians.

"The college in its infancy and for some time afterward was very poor. In February, 1883, Dr. S. Weir Mitchell presented $5,000, subsequently increased to $7,000, to establish an entertainment fund. This generous gift and its purpose was followed by the appointment of an entertainment committee which has been called upon to exercise its function on several occasions. The most important event in the history of the college after its organization was the Centennial Anniversary, celebrated Jan. 3 and 4, 1887. On January 2 the actual anniversary, the day was bitterly cold and is especially associated in my mind with the presence of Dr. R Palmer Howard, then professor of medicine in McGill College, Montreal, who was my guest and whom I took in the afternoon to old St. Peter's church on Pine Street, where lies buried John Morgan, one of the most brilliant and accomplished founders of the college.

"The occasion of the centennial also marked the completion of the then new college hall at Thirteenth and Locust Streets by the addition of the third story at a total cost of $67,256.50, including the site, which cost $14,408. Yet the total investment is insignificant as compared with what has been expended for this, our latest home, appointed as no building for a like purpose ever was. One of the most important functions of the college is the stand it has taken against encroachment on the right to use, humanely, animals for investigating the action of medicines and determining the causes, prevention, and cure of disease. The subject of quarantine has at all times received interested attention. The college has always been ready to render, to the extent of its ability, aid to members of the profession who have suffered in public calamity. In February, 1891, a committee was appointed to represent the college before the legislature in advocacy of a bill to establish a state board of medical examiners and licensers, and in opposing a bill providing a state board of medical education. The bill establishing the State Board of Medical Examiners was passed and has been of great service in advancing the standard of medical education.

"Of the library I may state that the total number of bound volumes up to Nov. 1, 1909, is 81,018; general library, 63,890; Lewis library, 13,536; S. D. Gross library, 3,375; Obstetrical Society library, 217. There are also unbound reprints and transactions, 8,202; unbound theses and dissertations, 23,711, and unbound pamphlets, 70,213. Between 2,000 and 3,000 volumes are purchased annually and many are donated by authors, publishers and friends."

THE BANQUET AND THE RECEPTION

On the evening of the dedicatory exercises a banquet was held in the Bellevue-Stratford Hotel. Nearly 500 persons were present. Dr. George E. deSchweinitz was toastmaster and the following toasts were responded to: "The Old College and the New," Dr. S. Weir Mitchell; "Libraries and Their Foundations," Mr. Andrew Carnegie; "The College Library and Its Treasures," Dr. William W. Keen; "The College and Its Civic Relations," Hon. Hampton L. Carson; "The College and Its Traditions," Dr. Arthur V. Meigs.

On November 11 the new building was thrown open to the inspection of the public and in the evening a reception was attended by over 500 persons. Preceding the reception the guests and visitors gathered in the assembly hall and were addressed by Dr. S. Weir Mitchell. Dr. James Tyson, president of the college, presided.

GENERAL NEWS AND COMMENT

Individual Drinking Cups.—The Norfolk and Western Railway has installed in each of its coaches slot devices from which individual drinking cups may be secured by passengers.

Prize for Aid for Deafness.—Professor Cozzolino of Naples, Italy, was the official delegate from Italy to the International Congress for Otology at Budapest, and he has since founded a $200 prize to be awarded at the next international congress, to be held at Boston in 1912, for the best work on the treatment of progressive deafness or a mechanical device for relieving it.

Personal.—By order of the Secretary of the Navy, November 11, the controversy as to whether line officers or medical officers shall command a hospital ship was decided when Surgeon George Pickrell, U. S. Navy, was detailed to command the hospital ship, *Solace.*——Dr. Varone Suarez, Havana, has been appointed secretary of sanitation of Havana, Cuba, vice Dr. Mathias Duque, resigned.

Prize for Work on Typhus Fever.—The Mexican government has authorized the National Medical Academy to announce a typhus prize fund of $25,000 (50,000 pesos): $10,000 will be awarded to the discoverer of the cause of exanthematous typhus, and $10,000 for the discovery of its mode of transmission or a curative serum, and $5,000 to the investigator whose work is judged most useful in helping toward such a discovery. The competition is international but all articles must be in Spanish and be in the hands of the secretary of the Academia N. de Medicina, Mexico, before Feb. 28, 1911.

Hookworm Commission.—Mr. John D. Rockefeller, who has given $1,000,000 to investigate and combat the hookworm disease, has selected the following commission to have charge of the administration of the fund: Drs. William H. Welch, Baltimore, Simon Flexner, New York City, and Charles Wardell Stiles, U. S. P. H. and M.-H. Service; President Edwin A. Alderman of the University of Virginia; Chancellor David F. Houston of Washington University, St. Louis; P. P. Claxton, professor of education in the University of Tennessee; J. Y. Joiner, state superintendent of education of North Carolina; Walter H. Page, editor of the *World's Work*; Principal H. B. Frissell of Hampton (Va.) Institute, Frederick T. Gates, Starr J. Murphy, and John D. Rockefeller, Jr.

Lombroso's Brain.—According to the wishes of the late Professor Lombroso, his autopsy was held in the amphitheater of the medical school at Turin. A number of professors and students were present. Evidences of interstitial myocarditis and atheromasia of the coronary arteries were found but the arteries in the brain were in good condition. Also in compliance with the wishes of the deceased, the brain was removed from the skull and given to Professor Boero to be preserved in the Institute of Normal Anatomy. It weighed 1,308 grams. Lombroso had written a romance and poems by the age of 10, the next year two tragedies modeled on Alfieri's, and had published two monographs on Roman archeology before he was 12. A year or two later he took up sociologic studies based on linguistic analysis of the Greek, Hebrew, Sanskrit, Coptic and Chinese, and before he entered the university had written two works on natural science.

New Medical Association.—The American Association for the Study and Prevention of Infant Mortality was organized at New Haven, November 13, as the result of the convention of the American Academy of Medicine for the discussion of that topic. The following officers were elected: President, Dr. J. H. Mason Knox, Jr., Baltimore; vice-presidents, Prof. C. E. A. Winslow, biologist-in-chief of the laboratory of sanitary research, Massachusetts Institute of Technology, Boston, and Homer Folks, secretary of the New York State Charities Aid Association, and secretary, Dr. Henry I. Bowditch, Boston.

CANADA

Civic Medical Officer.—The active attention of the executive committee of the New Brunswick Medical Association is at present engaged on the question of the appointment of a civic medical officer or civic health officer, whose duties are to include the examination of public school children and the care of the health of the children. At the last meeting of the executive committee a resolution to this effect was adopted.

Offenders Sentenced.—Mrs. Susan Labertis, a colored woman of Woodstock, charged with breach of the medical act, in that she practiced medicine without a license, was found guilty in the Toronto police court, September 7, and fined $50 and costs. ——Charles Williams, christian scientist of Virden, Man., is said to have been sentenced to serve two years in prison for failing to call in medical aid while treating for pneumonia a child who subsequently died.

Medical College Opens.—The opening lecture of the annual session of the medical faculty of McGill University was given by Professor Wolbach, October 1. Principal Peterson, who presided, reported the generous gift of Lord Strathcona, which has made possible the new medical building of the University. It was announced that arrangements have been made with the authorities of Montreal General Hospital to maintain an additional clinic for the benefit of English-speaking students.

Personal.—Dr. Frederick J. T. Old, Port Colburne, has been elected president, and Dr. Ernest L. Garner, Welland, secretary-treasurer of the Welland County Medical Association. ——Dr. John J. McFadden, Neepawa, Man., has been elected medical superintendent of the Brandon Hospital for the Insane, vice Dr. James J. Anderson.——Dr. George Bayham, Winnipeg, has returned after ten months abroad.——Dr. and Mrs. Henry Meek, London, have returned from Europe.—— The Manitoba Medical College has appointed Dr. E. J. Evatt to take charge of the department of anatomy.——A complimentary dinner in honor of Dr. Leonard G. Rowntree, Baltimore, was given at the Tecumseh House, London, by the Faculty of the Medical School and the executive of the alumni association.——Dr. Archibald R. B. Williamson has been appointed medical health officer of Kingston, Ont., vice Dr. John H. Bell.——Dr. John W. Wigham, Toronto, has been appointed associate coroner for that city, and Dr. Hugh C. McLean, Guelph, associate coroner for Wellington county.

Annual Meeting of Medical Council.—On October 13 and 14, the annual meeting of the Council of the College of Physicians and Surgeons of Manitoba was held, and the following officers elected: President, Dr. Thomas M. Milroy, Winnipeg; vice-presidents, Dr. John J. McFadden, Neepawa; registrar, Dr. John S. Gray, Winnipeg (reelected); treasurer, Dr. James Patterson, Winnipeg (reelected); representatives on the council of the University of Manitoba, Drs. Charles W. Clark, Thomas M. Milroy, Arthur W. Moody, and James N. Hutchison, and representative of the college on the Board of Studies of the University, Dr. Thomas M. Milroy. At a meeting of the council, held later, it was decided to raise the registration fee from $75 to $125, to take effect Jan. 1, 1910, and to abolish the annual fee of $2.——The Manitoba College of Physicians and Surgeons has offered to hand over to the University of Manitoba, without reservation, the new medical college, site and equipment, valued at $100,000, provided the university is freed from denominational control and is absolutely placed under the control of the state.

LONDON LETTER

(From Our Regular Correspondent)

London, Nov. 5, 1909.

Outbreak of Scarlet Fever and Diphtheria

London is at present suffering from a serious outbreak of scarlet fever and diphtheria, the number of cases considerably exceeding the usual autumnal rise in these diseases. Patients are being removed from their homes to the fever hospitals at the rate of 600 a week and the number of cases admitted amount to 3,805.

Hindus Demand that Appointments Be Thrown Open to Them

The civil medical administration of the teeming millions of our vast dependency of India is controlled by the officers of the Indian medical service, who are all Europeans. The government has established a number of medical colleges for the training of natives in western medicine under professors appointed from the Indian medical service. When these natives become qualified they form what is called the subordinate medical service. They are eligible for civil and military practice but not for the higher appointments. In the Indian army (which consists of natives officered by Europeans) they can attain no higher rank than that of captain. As the number of European physicians in India is small compared to the population the native physicians are now numerous and they fill a large number of government appointments in the hospitals, on plague duty, in the jails and in the sanitary administration generally. They form the great majority of the private practitioners; excepting the medical missionaries, there are scarcely any European physicians outside the army in the country. As stated in a previous letter to The Journal, Lord Morley, the secretary for India, has come to the conclusion that the demands on the medical service of the Indian army by civil practice are too great, that they must be restricted in the future and that civil appointments shall be made so far as possible in the future of private practitioners. The members of "the independent medical profession," i. e., the native physicians, have taken the opportunity of pressing their claims. They have held a meeting at Bombay and unanimously adopted a memorial asking that all civil medical appointments under the government shall be thrown open to natives and the present monopoly of the higher posts by the Indian medical service be abolished. They recommend that the Indian medical service shall be purely military. They also desire that multiple professorships at the medical colleges shall be abolished and that professors should not be allowed also to hold appointments on the staffs of hospitals. They anticipate that if their recommendations are adopted a saving of $1,000,000 annually to the state will result. As there are now many highly competent and well trained native physicians in India it does not seem that the reasonable request that they shall be allowed to compete for medical appointments in their own country can be refused.

A Physician's Heroism

In the early morning an explosion occurred in the Darran colliery, South Wales, before the workers on the night shift had left. The ordinary approach to the mine was completely blocked and the only way of access was by the shaft of another pit four miles away. A relief party, accompanied by Dr. Turner, the colliery surgeon, descended the pit and endeavored to reach the other pit. One after another they were overcome by the choke-damp and five died. The physician had a narrow escape. He repeatedly risked his life in heading the relief party and at last collapsed. His companions endeavored to rescue him but were so overcome by the choke-damp that they had to abandon him. After a time they were able to return and found him lying in the roadway still alive. He was carried to a place of safety and oxygen was administered. He was then taken in a comatose state to the Cardiff Infirmary. Twenty-nine lives were lost from the explosion.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, Oct. 28, 1909.

The Affair of the Ophthalmologic Clinic

The difficulties in finding a first-class ophthalmic surgeon willing to accept the appointment as successor to Schnabel are ever increasing. At first there was an apparent tendency on the part of the government to neglect the recommendation of Professor Hess of Würzburg by the medical faculty, then Hess refused to accept the office, without very substantial changes and adaptations, which required money. The government not complying with his wishes he declined the honor. Then Professor Dimmer of Graz, recommended in the second place, was offered the clinic. He made conditions nearly identical with those of Hess: enlargement of the clinic, reform of the present insufficient laboratories and teaching accommodations, and modern outfit. This was refused, whereupon he too declined. The splendid new general hospital, parts of which have been opened already, provides a real palace for an ophthalmic clinic, but this will not be erected before 1914. Thus, five years would have to be spent in the old building. Anyone who knows the present building will easily understand the attitude of the two surgeons. The students are now in danger of not enjoying the teaching of a first-class ordinary professor, although the surgeon in charge of the clinic at present is also a very good man. On the other hand, the standing of the Vienna medical school must be seriously hampered by such conditions.

Honors to a Dead and to a Living Teacher

In memory of the late Professor Albert, a surgeon whose name is well known beyond the frontiers of Austria, a relief tablet was unveiled in the hall of the university a short time ago. The tablet shows the surgeon at the side of a young woman anesthetized, explaining to his students the operation he is performing. It is a fine piece of art; the likeness is very striking to all those who had the privilege of knowing the surgeon. Albert was professor of surgery in Vienna from 1881 till 1900; he was a keen observer, a strict logical thinker, and one of the most successful teachers known in medicine. His methods of teaching were actually the sole reason that the Vienna school retained for many years the standing gained for it by Billroth. At the foot of the tablet a wreath has been placed by the surgical clinic, bearing the inscription: "Magno medico, maximo magistro, grata animo."

A few days later, a living physician, Professor Leopold Oser, celebrated his seventieth birthday among a number of his devoted friends and scholars. He is one of the pioneers in the study of the the gastro-intestinal tract; the chief methods of investigation of the pathology of the stomach are due to his clear mind. He was also one of the initiators of the Vienna Poliklinik, which has developed since to such importance as an annex to the general hospital as regards teaching. A very valuable contribution by Professor Oser to the pathology of cholera was and is still regarded as one of the best treatises on this subject. Among the numerous honors received by Oser was also a splendid address from the Vienna Medical Society (*Gesellschaft der Aerzte*), of which he was one of the presidents.

The Institute for Teaching of Physics

A similar incident is now attracting attention toward the unsatisfactory conditions in certain branches of our university institutes. Every medical student here must study physical science for at least one year at the physical institute. This is over sixty years old and was inadequate twenty-five years ago. It is an old, unhealthy, cold building with poor acoustic properties, capable of holding, in the laboratories and lecture hall, altogether about 100 students. Four hundred students have taken up these studies just now, and when the new professor, Dr. Lecher, a renowned investigator and teacher, began his lectures a few days ago, the impossibility of admitting all or even half the students caused an outburst of indignation from them. To force the government to a radical reform a strike was organized; the professor, who naturally sympathizes with his students, was asked to stop all his classes until all those who had a right to hear his lectures were able to do so. So the shameful condition now exists that students are debarred from learning because some very economical official does not care to have the ordinary slow course of red-tapeism disturbed. The daily press has aroused public opinion and now things will become very lively unless a definite step forward is soon made.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, Oct. 27, 1909.

The City Government and the Medical Profession

The mayor (*Magistrat*) of Berlin has again given the medical profession occasion for serious complaint. As I have previously told you examination bureaus were established about a year ago by the state and by the city (and suburbs) in which hygienic examinations were made free of charge. While all the other stations undertake examination of tuberculous material without fee, the city government of Berlin has refused to permit such examination by the municipal laboratory. The alleged reason for this determination is that there is no call for such examinations by the city laboratory since the well-to-do people can get the work done by their private physicians or in private laboratories and the tuberculosis dispensaries are ready to perform similar service for the patients of the krankenkassen and the poor. The city council did not concur in this decree of the administration, and requested the mayor to permit free examination of tuberculous material, but no change was made. A few days ago Privy Councillor Proskauer, of the Institute of Infectious Diseases, on account of unpleasant experiences, sent a new request to the mayor for permission to make free examinations for tuberculous patients. His request was refused and a new regulation announced which provides that half the fee of six cents (0.25 marks) must be advanced by every physician who sends a specimen of sputum for examination. The examination is made dependent on the payment of this sum. If this advance payment is not made within three days, the material for examination shall be destroyed. This senseless order, so contrary to the purpose of an examining laboratory, will be understood if one reflects that the president of the board in charge of this branch of the city government is a physician 71 years of age, who for a long time has been unfit to supervise the important work of his office, to say nothing of carrying it on. Although the medical profession in society meetings and in the press has repeatedly proposed that the organization of the personnel of the municipal health office be improved and especially that this unfit representative of the municipal administration should retire, the municipal authorities have so far continued the inadequate arrangements. It is to be hoped that the storm of protest which has been raised among physicians and in the press by this latest order will have the effect of securing finally an organization of sanitary matters suitable to the capital of the German empire.

Care of Patients With Advanced Pulmonary and Laryngeal Tuberculosis.

The imperial chancellor in a circular letter directed to the various federal governments recommended for consideration certain principles which have been laid down by the imperial health office regarding the establishment of institutions for the care of sufferers from advanced pulmonary and laryngeal tuberculosis. These propositions are as follows:

In addition to the regulations which have the purpose of making the germs from tuberculous patients harmless the attempt should be made to isolate patients with open pulmonary or laryngeal tuberculosis unless they are already in sanatoria. For this purpose it is recommended:

1. As many of this class as possible should be retained for the longest possible time in the general hospitals. In these institutions the consumptives should be separated from other patients in special rooms or, if it is feasible, in wards in separate buildings which should be constructed on the plans approved for sanatoria, with open porches, etc. Provision for such arrangements should be made in all general hospitals in process of construction.

2. Where a need exists, as in large cities on account of the overcrowding of the general hospitals, tuberculosis hospitals should be erected in the neighborhood of the city in some healthful, wooded locality.

3. In the tuberculosis hospitals or in the tuberculosis departments of the general hospitals the cure of the patients should be made a prominent aim in addition to the isolation. The construction of institutions which shall serve for the reception of unimprovable tuberculous invalids in the last stages (*Pflegeheime, Invalidenasyle*) is not at present recommended.

4. Measures should be provided by which indigent families of consumptives who have been received into the hospitals for the longest possible stay shall be assisted in a financial way during this period. Those numerous consumptives who, partly on account of still persisting ability to work and partly from other reasons, will not enter the hospitals should be placed under conditions that will, as far as possible, limit the liability of infection of their environment. This task devolves on the institutions charged with the care of such patients, more particularly the tuberculosis dispensaries (*Fürsorgestellen*) which, in addition to the utmost practicable isolation of patients in their homes, should take care for the betterment of dwellings and the education of the patients and their environment in hygienic principles. In the fulfilment of this task they need the abundant support of the municipal authorities and communities.

5. Provision should be made for a sufficient number of laboratories in which gratuitous examination of sputum shall be made.

6. The managing boards of all institutions serving for the reception of consumptives, including popular sanatoria and tuberculosis dispensaries should be constantly in touch with each other in order to establish uniform rules by which the entrance and discharge of patients from time to time shall be governed.

Cholera in Prussia

In the last few days a few cases of cholera have been discovered in East Prussia, all of which, however, are to be attributed to introduction from Russia and therefore give no occasion for alarm.

Contemplated Increase in the Price of Medicines

The demand of the pharmacists for an increase in their charges for medicines on account of the general increase in the cost of living is likely to be granted by the ministry. In this way, however, the increase of expense indeed never comes to an end for the increase of one item involves an increase in others. If the price of medicines and medical services is raised, the butcher and the grocer naturally demand more for their wares and if the butchers receive more money, the doctors and the pharmacists will naturally charge more for their services. It is thus a vicious circle.

PARIS LETTER

(From Our Regular Correspondent)

Paris, Oct. 29, 1909.

Lectures on Educational Hygiene

The French League for Educational Hygiene (*Ligue française pour l'hygiène scolaire*), the purpose and workings of which I have already described (The Journal, Sept. 29, 1908, li, 1094), has organized under the auspices of the School of Higher Social Studies (*Ecole des hautes études sociales*), during the winter semester of 1909-1910, a series of lectures on educational hygiene. The lectures and subjects are as follows: Professor Calmette, director of the Pasteur Institute of Lille, "Hygiene in Education"; Dr. Gallois, "Organized Cooperation of Parents and Teachers to Improve the Physical, Intellectual and Moral Hygiene of the Schools"; Dr. de Pradel, "Cooperation Between Physicians and Teachers"; Dr. Pierre Regnier, "Reduction of the Number of Hours for Study in Order to Give Time for Physical Education"; Dr. Cayla, "Educational Walks and Tours." Besides these lectures given by physicians, a certain number will be given by the members of the teaching profession on the subject of open-air schools, rural and family boarding-schools, vacation colonies, open-air games in city schools and the teaching of manual crafts in the schools. Teachers and physicians will be invited to take part in discussions following the lectures.

Opening of the American Hospital in Paris

On October 28 took place the official opening of the American hospital at Neuilly-sur-Seine (one of the suburbs of Paris), Boulevard du Château 55, in the presence of M. Doumergue, Minister of Public Instruction, Messrs. Henry White, United States ambassador, John J. Hoff, vice-president of the council of administration, the members of the board of directors and the medical staff. The hospital contains twenty-five beds in separate rooms, with bathrooms, the equipment being according to the latest hygienic requirements. The hospital, which was founded by certain Americans residing in Paris, will receive in the first place sick and needy Americans, who will be cared for free. Well-to-do Americans may likewise be cared for; from these the hospital will exact no fixed charges, but will receive donations toward the general fund. Two beds will be reserved for emergency cases without regard to the nationality of the patient.

Monument to Professor Liégeois

The monument, raised by international subscription, to Prof. Jules Liégeois, one of the founders of the famous Nancy school, whose tragic death was mentioned in The Journal, Sept. 12, 1908, li, 929, was unveiled October 24 at Damvillers, department of the Meuse, Liégeois' native city. The monument consists of a bust of the professor and is on a granite pedestal in the center of the public square of the city hall of Damvillers. Besides an official delegation from the University of Nancy, other French and foreign scientists were present at this tribute to the memory of the first jurisconsult who studied the relation of hypnotism and suggestion to criminal law and legal medicine.

Cholera in Belgium

According to official information, there had been, on October 28, six deaths due to cholera at Boom, Belgium. This is the first time that cholera has been officially acknowledged in Belgium since 1892. The foreign governments were informed.

Pharmacology

MEAT AND BEEF JUICES

Report of the Council on Pharmacy and Chemistry

The following was submitted to the Council by a subcommittee:

> *To the Council:* While meat extracts contain only traces of coagulable proteids and have little food value, meat juices are prepared by a process which ensures the presence in the finished product of considerable quantities of coagulable proteids and they therefore have considerable value as foods. Many preparations which are sold as beef juices or meat juices have no right to these designations. Since the public and physicians are likely to be misled by the names given to these products and by the false claims which are made for them as foods and depend on them in the nourishment of the sick, it is important that their composition and their value as foods should be known.
>
> In the following report is presented the results of an examination of some of the commercial products found on the American market. The report shows that *Wyeth's Beef Juice* (John Wyeth & Bro., Philadelphia), *Bovinine* (The Bovinine Co., New York), *Carnine* (Carnine Co., Fougera & Co., New York), and *Valentine's Meat Juice* (M. J. Valentine, Richmond, Va.) are sold under names which are incorrect, that their composition is not correctly stated by the manufacturers and that false and misleading statements are made in regard to their value as food.
>
> It is recommended that the products named be refused recognition for conflict with rules 1, 6 and 8. Since these preparations are typical of many others on the market, and as their use is a menace to the public health it is recommended that the report be published.

This report was adopted by the Council.

W. A. Puckner, Secretary.

Beef or meat juices are clearly to be distinguished from beef or meat extracts. The word "juice" applies solely to the fluid portion remaining in fresh meat after proper cooling and storing and may be obtained by pressure or diffusion with or without a low degree of heat. Under heavy pressure freshly chopped meat will yield from 25 per cent. to 40 per cent. of a thick reddish juice and if the meat is previously frozen or heated to 60° C., as much as 50 per cent. may be obtained. This gives some idea as to the probable cost of preparing beef juice at home. The chief characteristics of meat juice are the presence of a considerable proportion of coagulable protein and a low content of meat bases. The above represents the nature of these commodities as usually understood by the medical profession as is clearly shown by this quotation:[1]

> "One or two teaspoonfuls of this (meat juice) are added to a teacupful of cold or warm water, which, however, must not be boiling, or otherwise the albumin would be coagulated, but it may, however, be sufficiently warm to drink comfortably."

Beef juice is considered by some physicians of much dietetic service and believed to represent liquid food in concentrated form. W. O. Atwater,[2] relative to this product, says:

> "Beef juice obtained from the best steak which has been merely warmed through over the coals and then entirely deprived of soluble substance by a screw press, is undoubtedly the most concentrated of the liquid foods."

The latter authority gives a number of analyses of beef juices prepared under known conditions.

DEFINITION OF MEAT JUICE

Meat juice is defined by the standards committee of the Association of Official Agricultural Chemists as the fluid portion of muscle fiber obtained by pressure or otherwise, and may be concentrated by evaporation at a temperature below the coagulating point of the soluble protein. The solids contain not more than 15 per cent. of ash, not more than 25 per cent. of sodium chlorid (calculated from the total chlorin present), not more than 4 nor less than 2 per cent. of phosphoric acid (P_2O_5), and not less than 12 per cent. of nitrogen. The nitrogenous bodies contain not less than 35 per cent. of coagulable proteins and not more than 40 per cent. of meat bases.

Meat juices of commerce are supposed to be made by subjecting properly prepared meat to heavy pressure with subsequent concentration of the juice *in vacuo* at a low temperature. The latter is necessary because if the temperature is raised to any material extent the valuable coagulable, soluble proteins referred to above, are precipitated and lost. In order to establish a basis of comparison relative to the composition of natural raw beef juice a number of samples were prepared under known conditions and submitted to analysis. The results contained in the subjoined table clearly show that meat juices made under known conditions vary according to the mode of preparation, but it is evident that practically one-half of the nitrogen is present as coagulable protein.

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[1] Brunton, Sir Lauder: "Disorders of Assimilation, Digestion, etc.," p. 183.

[2] Bull. No. 21, U. S. Dept. Agricult., Office of Experiment Stations.

FOOD VALUES

In order to arrive at the food value of any commodity it is necessary to consider its chemical composition, available potential energy, absorbability, etc. On referring to the analytical table it will be found that the amount of inorganic material in meat juices Nos. 7 and 10 is unduly high. It appears that sodium chlorid, *per se*, has been added to both Bovinine and Wyeth's Beef Juice probably as a preservative in the latter and for condimental purposes in the former. The relative and absolute proportions of phosphatic material in both products is excessive. The other constituents present in the ash are those usually found in meat products.

The amount of sugar and glycerin in Carnine is interesting. These agents may be added for preserving purposes but the resulting product, on account of its syrupy appearance, leads to the belief and is so represented, that it is a concentrated food. Glycerin is also present in Bovinine and Valentine's meat juice. Bovinine in addition contains about 8 per cent. alcohol.

The total nitrogen content of the trade products excepting Carnine, is greater than the amount of nitrogen present in meat juices proper, but the relative amount of nitrogen present as coagulable protein—the valuable part of meat juice—is much greater in the latter. In fact, the amount of coagulable protein present in Valentine's Meat Juice may be considered *nil*, which indicates that an unduly high temperature is used in its preparation. In this connection it should also be noted that even a moderate elevation of temperature influences the chemical composition of meat juices. For example, the coagulable matter present in Nos. 3, 4 and 5, is approximately one-half that present in Nos. 1 and 2, which appears to indicate that the best product can be made without the use of any heat whatever. Several of the trade products, namely Nos. 7, 8 and 9, contain about as much coagulable material as meat juice made by heating beef to 60 C. According to the formula appearing in a circular of the Bovinine Company, a part of the coagulable matter is present in the form of egg albumin, but the company claims egg albumin is not used at present. In the case of Carnine, the coagulable matter appears to be introduced by the use of blood itself. The exact nature of the coagulable protein matter in Wyeth's Beef Juice has not been ascertained. It is well-known to manufacturers and physiologic chemists that it is practically impossible to manufacture a genuine meat juice possessing a reasonable amount of coagulable proteins, which is stable without a preservative.

Meat juices, in addition to the coagulable protein material, contain other protein bodies such as albumoses and peptones. These bodies are largely formed from the original protein bodies present in the meat juice during the process of manufacture. They are highly nutritious and largely and readily absorbed from the alimentary canal but the amount of these bodies present in the trade products is relatively small excepting in Bovinine, which is not a meat juice, particularly when the high prices are considered.

A considerable proportion of the nitrogenous matter contained in Valentine's and Wyeth's products is present in the form of amino bodies frequently included in the general term, "extractives." These bodies may be oxidized in the body and thus supply heat in a manner similar to alcohol, but it should be remembered that there still appears to be a wide difference of opinion among various observers on this point. Some appear to be of the opinion that the amino bodies are devoid of food value in that these bodies appear in the urine practically unchanged. It would, therefore, appear that the value of the amino bodies is largely of a stimulant character.

The food value of meat juices, therefore, resides largely, if not solely, in the coagulable and other protein material present. Comparing the calorific value or potential energy available in meat juices proper on this basis with that present in the commercial products, excluding Bovinine, it will be seen that on the average the genuine meat juices—that is, those made by pressure, direct from the meat itself as wanted—are much superior to the commercial products, notwithstanding the marked concentration in some cases. The calories given in the accompanying table do not include sugar, alcohol or any other added material of this character.

WYETH'S BEEF JUICE

"Wyeth's Beef Juice" is not a true beef juice, but resembles rather a diluted meat extract. It contains much added inorganic matter, is low in coagulable proteins, and considering the degree of concentration, relatively deficient in nutritive value. Some of the claims contained in the circular accompanying this preparation, in view of its composition set forth above, may be of interest:

COMPOSITION OF MEAT JUICES

Number.		Name of Preparation.	Volatile matter 100 C.	Inorganic matter.	Sodium chlorid.	Phosphoric pentoxid (P_2O_5).	Ether extract, Glycerol and undetermined matter.	Total nitrogen.	Coagulable proteins (N x 6.25).	Other proteins (N x 6.25).	Amino bodies (N x 3.12).	Calories per 500 gm. obtained from protein factor 4.8.	Calories per 500 gm. obtained from amino bodies factor 0.56.
			Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.			
1	Made in Laboratory.	Chuck beef, cold pressed..	86.85	1.86	.20	.31	1.32	1.74	6.13	2.94	.90	217.68	2.52
2		Round beef, cold pressed..	85.76	1.53	.12	.37	.75	2.08	8.56	2.37	1.03	262.32	2.88
3		Chuck beef pressed at 60 C.	91.90	1.29	.19	.29	.81	1.09	2.56	2.50	.84	121.44	2.35
4		Chuck beef pressed at 60 C.	89.56	1.27	.16	.37	2.98	1.09	3.00	2.63	.56	135.12	1.57
5		Round beef pressed at 60 C.	90.65	1.36	.16	.36	2.09	1.16	4.25	.31	1.34	109.44	3.75
6		Chuck beef heated 6 hours before pressing 60-100 C.	98.11	.39	.05	.12	.25	.24	....	1.00	.25	24.00	.70
7	Trade Products.	Beef Juice, John Wyeth & Bro., Philadelphia, Pa..	58.84	16.21	6.71	3.27	12.51	3.15^1	2.88	3.56	6.00	154.56	16.8
8		Bovinine, The Bovinine Co. 75 W. Houston St., New York City	80.40^3	1.55	1.05	.09	3.64^5	2.36	3.38	10.75	.28	339.12	.78
9		Carnine Co., Lefranco, Paris, France; Imported by Fougera & Co., Agts., New York City.........	24.80^4	.86	0.09	0.33	68.94^6	.96	2.25	2.56	.59	115.44	1.65
10		Meat Juice, M. J. Valentine, Richmond, Va	57.64	10.26	1.77	3.41	20.41^7	3.06^2	.19	5 44	6.06	135.12	16.97

1. Including .20 per cent. as NH_3; 2, including .22 per cent. NH_3; 3, 8.17 per cent alcohol found; 4, vacuum 70 C.; 5, 3.1 per cent. glycerol found; 6, 47.50 per cent. cane sugar—14.2 per cent glycerol found; 7, 8 per cent. of glycerol found.

The several samples of beef juice were prepared from practically fat free, finely comminuted, chuck and round beef, first by pressure at the ordinary temperature; second, by heating the prepared meat for several hours at 60 C., then submitting to pressure. Sample No. 6 was made from chuck beef, prepared as above, by heating six hours at from 60 to 100 C., and expressing after cooling. It is not a beef juice proper but was prepared, analyzed and added to the list for information. Its composition resembles several commercial articles closely. A number of products represented and sold as meat juice in the United States were analyzed and the results recorded in the accompanying table.

PARIS LETTER

(From Our Regular Correspondent)

Paris, Oct. 29, 1909.

Lectures on Educational Hygiene

The French League for Educational Hygiene (*Ligue française pour l'hygiène scolaire*), the purpose and workings of which I have already described (The Journal, Sept. 29, 1908, li, 1094), has organized under the auspices of the School of Higher Social Studies (*Ecole des hautes études sociales*), during the winter semester of 1909-1910, a series of lectures on educational hygiene. The lectures and subjects are as follows: Professor Calmette, director of the Pasteur Institute of Lille, "Hygiene in Education"; Dr. Gallois, "Organized Cooperation of Parents and Teachers to Improve the Physical, Intellectual and Moral Hygiene of the Schools"; Dr. de Pradel, "Cooperation Between Physicians and Teachers"; Dr. Pierre Regnier, "Reduction of the Number of Hours for Study in Order to Give Time for Physical Education"; Dr. Cayla, "Educational Walks and Tours." Besides these lectures given by physicians, a certain number will be given by the members of the teaching profession on the subject of open-air schools, rural and family boarding-schools, vacation colonies, open-air games in city schools and the teaching of manual crafts in the schools. Teachers and physicians will be invited to take part in discussions following the lectures.

Opening of the American Hospital in Paris

On October 28 took place the official opening of the American hospital at Neuilly-sur-Seine (one of the suburbs of Paris), Boulevard du Château 55, in the presence of M. Doumergue, Minister of Public Instruction, Messrs. Henry White, United States ambassador, John J. Hoff, vice-president of the council of administration, the members of the board of directors and the medical staff. The hospital contains twenty-five beds in separate rooms, with bathrooms, the equipment being according to the latest hygienic requirements. The hospital, which was founded by certain Americans residing in Paris, will receive in the first place sick and needy Americans, who will be cared for free. Well-to-do Americans may likewise be cared for; from these the hospital will exact no fixed charges, but will receive donations toward the general fund. Two beds will be reserved for emergency cases without regard to the nationality of the patient.

Monument to Professor Liégeois

The monument, raised by international subscription, to Prof. Jules Liégeois, one of the founders of the famous Nancy school, whose tragic death was mentioned in The Journal, Sept. 12, 1908, li, 929, was unveiled October 24 at Damvillers, department of the Meuse, Liégeois' native city. The monument consists of a bust of the professor and is on a granite pedestal in the center of the public square of the city hall of Damvillers. Besides an official delegation from the University of Nancy, other French and foreign scientists were present at this tribute to the memory of the first jurisconsult who studied the relation of hypnotism and suggestion to criminal law and legal medicine.

Cholera in Belgium

According to official information, there had been, on October 28, six deaths due to cholera at Boom, Belgium. This is the first time that cholera has been officially acknowledged in Belgium since 1892. The foreign governments were informed.

Pharmacology

MEAT AND BEEF JUICES

Report of the Council on Pharmacy and Chemistry

The following was submitted to the Council by a subcommittee:

To the Council: While meat extracts contain only traces of coagulable proteids and have little food value, meat juices are prepared by a process which ensures the presence in the finished product of considerable quantities of coagulable proteids and they therefore have considerable value as foods. Many preparations which are sold as beef juices or meat juices have no right to these designations. Since the public and physicians are likely to be misled by the names given to these products and by the false claims which are made for them as foods and depend on them in the nourishment of the sick, it is important that their composition and their value as foods should be known.

In the following report is presented the results of an examination of some of the commercial products found on the American market. The report shows that *Wyeth's Beef Juice* (John Wyeth & Bro., Philadelphia), *Bovinine* (The Bovinine Co., New York), *Carnine* (Carnine Co., Fougera & Co., New York), and *Valentine's Meat Juice* (M. J. Valentine, Richmond, Va.) are sold under names which are incorrect, that their composition is not correctly stated by the manufacturers and that false and misleading statements are made in regard to their value as food.

It is recommended that the products named be refused recognition for conflict with rules 1, 6 and 8. Since these preparations are typical of many others on the market, and as their use is *a menace to the public health* it is recommended that the report be published.

This report was adopted by the Council.

W. A. Puckner, Secretary.

Beef or meat juices are clearly to be distinguished from beef or meat extracts. The word "juice" applies solely to the fluid portion remaining in fresh meat after proper cooling and storing and may be obtained by pressure or diffusion with or without a low degree of heat. Under heavy pressure freshly chopped meat will yield from 25 per cent. to 40 per cent. of a thick reddish juice and if the meat is previously frozen or heated to 60° C., as much as 50 per cent. may be obtained. This gives some idea as to the probable cost of preparing beef juice at home. The chief characteristics of meat juice are the presence of a considerable proportion of coagulable protein and a low content of meat bases. The above represents the nature of these commodities as usually understood by the medical profession as is clearly shown by this quotation:[1]

> "One or two teaspoonfuls of this (meat juice) are added to a teacupful of cold or warm water, which, however, must not be boiling, or otherwise the albumin would be coagulated, but it may, however, be sufficiently warm to drink comfortably."

Beef juice is considered by some physicians of much dietetic service and believed to represent liquid food in concentrated form. W. O. Atwater,[2] relative to this product, says:

> "Beef juice obtained from the best steak which has been merely warmed through over the coals and then entirely deprived of soluble substance by a screw press, is undoubtedly the most concentrated of the liquid foods."

The latter authority gives a number of analyses of beef juices prepared under known conditions.

DEFINITION OF MEAT JUICE

Meat juice is defined by the standards committee of the *Association of Official Agricultural Chemists* as *the fluid portion of muscle fiber* obtained by pressure or otherwise, and may be concentrated by evaporation at a temperature below the coagulating point of the soluble protein. The solids contain not more than 15 per cent. of ash, not more than 2.5 per cent. of sodium chlorid (calculated from the total chlorin present), not more than 4 nor less than 2 per cent. of phosphoric acid (P_2O_5), and not less than 12 per cent. of nitrogen. The nitrogenous bodies contain not less than 35 per cent. of *coagulable proteins and not more than 40 per cent. of meat bases.*

Meat juices of commerce are supposed to be made by subjecting properly prepared meat to heavy pressure with subsequent concentration of the juice *in vacuo* at a low temperature. The latter is necessary because if the temperature is raised to any material extent the valuable coagulable, soluble proteins referred to above, are precipitated and lost. In order to establish a basis of comparison relative to the composition of natural raw beef juice a number of samples were prepared under known conditions and submitted to analysis. The results contained in the subjoined table clearly show that meat juices made under known conditions vary according to the mode of preparation, but it is evident that practically one-half of the nitrogen is present as coagulable protein.

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[1] Brunton, Sir Lauder: "Disorders of Assimilation, Digestion, etc.," p. 183.

[2] Bull. No. 21, U. S. Dept. Agricult., Office of Experiment Stations.

FOOD VALUES

In order to arrive at the food value of any commodity it is necessary to consider its chemical composition, available potential energy, absorbability, etc. On referring to the analytical table it will be found that the amount of inorganic material in meat juices Nos. 7 and 10 is unduly high. It appears that sodium chlorid, *per se*, has been added to both Bovinine and Wyeth's Beef Juice probably as a preservative in the latter and for condimental purposes in the former. The relative and absolute proportions of phosphatic material in both products is excessive. The other constituents present in the ash are those usually found in meat products.

The amount of sugar and glycerin in Carnine is interesting. These agents may be added for preserving purposes but the resulting product, on account of its syrupy appearance, leads to the belief and is so represented, that it is a concentrated food. Glycerin is also present in Bovinine and Valentine's meat juice. Bovinine in addition contains about 8 per cent. alcohol.

The total nitrogen content of the trade products excepting Carnine, is greater than the amount of nitrogen present in meat juices proper, but the relative amount of nitrogen present as coagulable protein—the valuable part of meat juice—is much greater in the latter. In fact, the amount of coagulable protein present in Valentine's Meat Juice may be considered *nil*, which indicates that an unduly high temperature is used in its preparation. In this connection it should also be noted that even a moderate elevation of temperature influences the chemical composition of meat juices. For example, the coagulable matter present in Nos. 3, 4 and 5, is approximately one-half that present in Nos. 1 and 2, which appears to indicate that the best product can be made without the use of any heat whatever. Several of the trade products, namely Nos. 7, 8 and 9, contain about as much coagulable material as meat juice made by heating beef to 60 C. According to the formula appearing in a circular of the Bovinine Company, a part of the coagulable matter is present in the form of egg albumin, but the company claims egg albumin is not used at present. In the case of Carnine, the coagulable matter appears to be introduced by the use of blood itself. The exact nature of the coagulable protein matter in Wyeth's Beef Juice has not been ascertained. It is well-known to manufacturers and physiologic chemists that it is practically impossible to manufacture a genuine meat juice possessing a reasonable amount of coagulable proteins, which is stable without a preservative.

Meat juices, in addition to the coagulable protein material, contain other protein bodies such as albumoses and peptones. These bodies are largely formed from the original protein bodies present in the meat juice during the process of manufacture. They are highly nutritious and largely and readily absorbed from the alimentary canal but the amount of these bodies present in the trade products is relatively small excepting in Bovinine, which is not a meat juice, particularly when the high prices are considered.

A considerable proportion of the nitrogenous matter contained in Valentine's and Wyeth's products is present in the form of amino bodies frequently included in the general term, "extractives." These bodies may be oxidized in the body and thus supply heat in a manner similar to alcohol, but it should be remembered that there still appears to be a wide difference of opinion among various observers on this point. Some appear to be of the opinion that the amino bodies are devoid of food value in that these bodies appear in the urine practically unchanged. It would, therefore, appear that the value of the amino bodies is largely of a stimulant character.

The food value of meat juices, therefore, resides largely, if not solely, in the coagulable and other protein material present. Comparing the calorific value or potential energy available in meat juices proper on this basis with that present in the commercial products, excluding Bovinine, it will be seen that on the average the genuine meat juices—that is, those made by pressure, direct from the meat itself as wanted—are much superior to the commercial products, notwithstanding the marked concentration in some cases. The calories given in the accompanying table do not include sugar, alcohol or any other added material of this character.

WYETH'S BEEF JUICE

"Wyeth's Beef Juice" is not a true beef juice, but resembles rather a diluted meat extract. It contains much added inorganic matter, is low in coagulable proteins, and considering the degree of concentration, relatively deficient in nutritive value. Some of the claims contained in the circular accompanying this preparation, in view of its composition set forth above, may be of interest:

COMPOSITION OF MEAT JUICES

Number.		Name of Preparation.	Volatile matter 100 C.	Inorganic matter.	Sodium chlorid.	Phosphoric pentoxid (P_2O_5).	Ether extract, Glycerol and undetermined matter.	Total nitrogen.	Coagulable proteins (N x 6.25).	Other proteins (N x 6.25).	Amino bodies (N x 3.12).	Calories per 500 gm. obtained from protein factor 4.8.	Calories per 500 gm. obtained from amino bodies factor 0.56.
			Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.			
1	Made in Laboratory.	Chuck beef, cold pressed..	86.85	1.86	.20	.31	1.32	1.74	6.13	2.94	.90	217.68	2.52
2		Round beef, cold pressed..	85.76	1.53	.12	.37	.75	2.08	8.56	2.37	1.03	262.32	2.88
3		Chuck beef pressed at 60 C.	91.90	1.29	.19	.29	.81	1.09	2.56	2.50	.84	121.44	2.35
4		Chuck beef pressed at 60 C.	89.56	1.27	.16	.37	2.98	1.09	3.00	2.63	.56	135.12	1.57
5		Round beef pressed at 60 C.	90.65	1.36	.16	.36	2.09	1.16	4.25	.31	1.34	109.44	3.75
6		Chuck beef heated 6 hours before pressing 60-100 C.	98.11	.39	.05	.12	.25	.24	....	1.00	.25	24.00	.70
7	Trade Products.	Beef Juice, John Wyeth & Bro., Philadelphia, Pa..	58.84	16.21	6.71	3.27	12.51	3.15[1]	2.88	3.56	6.00	154.56	16.8
8		Bovinine, The Bovinine Co. 75 W. Houston St., New York City	80.40[3]	1.55	1.05	.09	3.64[5]	2.36	3.38	10.75	.28	339.12	.78
9		Carnine Co., Lefranco, Paris, France; Imported by Fougera & Co., Agts., New York City.........	24.80[4]	.86	0.09	0.33	68.94[6]	.96	2.25	2.56	.59	115.44	1.65
10		Meat Juice, M. J. Valentine, Richmond, Va	57.64	10.26	1.77	3.41	20.41[7]	3.06[2]	.19	5.44	6.06	135.12	16.97

1. Including .20 per cent. as NH_3; 2, including .22 per cent. NH_3; 3, 8.17 per cent alcohol found; 4, vacuum 70 C.; 5, 3.1 per cent. glycerol found; 6, 47.50 per cent. cane sugar—14.2 per cent glycerol found; 7, 8 per cent. of glycerol found.

The several samples of beef juice were prepared from practically fat free, finely comminuted, chuck and round beef, first by pressure at the ordinary temperature; second, by heating the prepared meat for several hours at 60 C., then submitting to pressure. Sample No. 6 was made from chuck beef, prepared as above, by heating six hours at from 60 to 100 C., and expressing after cooling. It is not a beef juice proper but was prepared, analyzed and added to the list for information. Its composition resembles several commercial articles closely. A number of products represented and sold as meat juice in the United States were analyzed and the results recorded in the accompanying table.

> "Wyeth's Beef Juice . . . , containing two fluid ounces and representing three pounds of prime lean beef, . . ."
>
> ". . . beef extracts made by the Liebig process are utterly devoid of the valuable and nutritious albuminous constituents of meat, . . ."
>
> [Wyeth's Beef Juice] "should not be compared with ordinary beef extract, . . ."

BOVININE

Bovinine, advertised as a "condensed beef juice prepared by a cold process" is a mixture of alcohol, glycerin, added sodium chlorid, and apparently some form of defibrinated blood. According to the manufacturer's literature egg albumin was used formerly but this ingredient is said to be no longer employed. It is not a meat juice in any sense of the word. Numerous misrepresentations will be found on the label and in the literature of Bovinine, of which the following are typical:

> "The blood of selected steers prepared by a cold process, furnishing a perfect food, free from insoluble elements."
>
> "The rapidity with which Bovinine is absorbed and assimilated in the stomach . . ."
>
> "It supplies complete nutrition to the patient."
>
> "Bovinine contains all the elements of the animal, vegetable and mineral kingdoms for the production of new blood with great rapidity. Its principal constituents have been selected with a view to furnish the largest amount of nutriment in the most condensed form and all the resources of modern chemical analysis have been *brought to bear on this important problem.*"

A series of experiments carried out with dogs under anesthesia, by injecting Bovinine into the stomach, the pyloric end of which was ligated, shows that Bovinine is not readily absorbed and assimilated by the stomach as claimed. The amount of protein material found in the stomach at the end of one-half hour to one hour and a quarter was practically equal to the amount introduced by the Bovinine.

It is also represented that Bovinine is of great service in case of an irritable stomach. This is not borne out by experiment. Bovinine fed to dogs by the mouth, either alone or mixed with food, induced vomiting, which was less marked when Bovinine was given with the regular diet. An examination of the urine of these animals showed a marked diminution of the amount of indican, while the ethereal sulphates were enormously increased, both absolutely and relatively, when Bovinine was given. Experiments on rabbits have shown that Bovinine injected into the peritoneal cavity was invariably followed by large quantities of albumin in the urine, which persisted for from 24 to 48 hours. Thirty to 50 c.c. per kilo given by mouth daily caused emaciation and weakness; in some cases, *irritation of the gastrointestinal canal, with death* of the animal in from 7 to 12 days.

CARNINE

Carnine is a French preparation imported into the United States by Fougera & Co., of New York City. In physical appearace it looks like highly concentrated food, but analysis shows that it consists of a small proportion of defibrinated blood dissolved in a mixture of syrup and glycerol, the whole agreeably flavored. It is represented as a "juice of rare meat, prepared by cold process. Each tablespoonful represents 100 gm. of raw meat, or 3½ ounces." It is clear that Carnine is not a meat juice in any sense of the word.

VALENTINE'S MEAT JUICE

Valentine's Meat Juice resembles in physical appearance taste, odor and by chemical analysis a diluted meat extract. The nutritive value of meat extracts is virtually *nil*, as is well-known by the medical profession. Notwithstanding the composition of Valentine's Meat Juice and the fact that beef extract represents little nutritive value, the manufacturer makes the following misleading representations:

> "The two-ounce oval bottle, adopted for the Meat Juice contains the concentrated juice of four pounds of the best beef, exclusive of fat; or the *condensed* essence of one and a half pints of pure liquid juice which is obtained from the flesh of beef."
>
> "The use of *hot water* with the Meat Juice *changes its character and impairs its value.*" [Italics in original.—Ed.]

The company must certainly be aware of the fact that its product contains little, if any, coagulable proteids.

CONCLUSIONS

In conclusion; neither Bovinine nor Carnine is a meat juice, the former is anything but palatable and the latter soon cloys. "Valentine's Meat Juice" and "*Wyeth's Beef Juice*" are *virtually diluted meat extracts* which are known to possess little food value. A physician depending on any of the foregoing products to supply material nourishment, in case of serious illness, is deceiving himself, starving his patients, and may be lessening their chances for recovery. If a patient recovers while using these commodities, it is certainly not due to the food value contained in them.

ENTERONOL

An Invitation to The Journal to Humbug the Profession

The Journal has received a circular letter from the Enteronol Company, in which the following liberal offer is made:

> "We are willing to take one-fourth or one-half page 'ad' in your Journal for a year at the regular rate, on condition that you accept payment therefore in our GUARANTEED 7 per cent., preferred stock at par; or if you desire, in ENTERONOL at the net wholesale price to physicians."

Not that this offer is made exclusively to The Journal:

> "A large number of medical journals have accepted the foregoing proposition; many carrying this advertising for several years already."
>
> "Our company is cooperative; we paying no cash for advertising. The company is owned principally by physicians, medical journals, and druggists."

The journals of which we have record that carry the enteronol advertisement are: *Kansas City Medical Record, Milwaukee Medical Journal, Toledo Medical and Surgical Reporter, Proctologist, Pediatrics*, and the *Atlanta Journal-Record of Medicine*. If the statements made by the Enteronol Co. are true, we might infer that these journals are being paid for advertising space either with "preferred stock" or *with the* nostrum itself. As we have previously shown, however, the veracity of the enteronol advertising matter is by no means unimpeachable.

Enteronol, it will be remembered, was exposed in The Journal, March 21, 1908. It is advertised as the "greatest antiseptic and germicide known to science," and possesses (?) such remarkable power that it "destroys the germs of typhoid fever, acute and chronic diarrhea, dysentery, cholera infantum, cholera morbus, summer complaint, Asiatic cholera, etc., within two hours." "The original product is found only high up on the sides of the loftiest mountains in the world—the *Himalayas of India.*"

THE "LITERATURE" FORMULA

Of course it has a "formula":

Ipecac
Sub. nit. bismuth
Latalia rad.
Camphor
Lupulin
Caffein
Rheum

This seems very open and above board, except as to quantities, until one tries to find out what "latalia rad." is; then it is discovered that it is the "mysterious stranger" of pharmacognosy. Experts to whom this "remedy" was submitted were unable even to find mention of such a drug or plant as "latalia rad." Nor was this the only fake found concerning the stuff; carefully conducted experiments repeatedly carried out in the Association's laboratory failed to disclose even a trace of bismuth subnitrate or caffein. These experiments did show, however, that the tablets contained an amount of aluminum corresponding to over 25 per cent. of crystallized alum. This led to the conclusion that alum, whose presence is not even hinted at in the "formula," is the chief constituent of enteronol and as a corollary that the formula is meaningless and worthless.

THE LABEL FORMULA

There is a curious lack of coordination between the "formula" *as printed on the label and that given in the "literature."* The Food and Drugs Act, it will be remembered, makes lying on the label illegal, and therefore dangerous; statements in advertising matter that does not accompany the product, however, are not controlled by that law. The "formula" in the "literature" we have already given; the "formula" on the label gives the following ingredients:

Ipecac
Sub. nit. bismuth
Opium, ¼ gr.
Camphor
Lupulin
Caffein
Rheum

Two things about this are worth noting: One is that the name of the ingredient on which the manufacturer lays so much stress—latalia rad., the mysterious Himalayan plant—is absent from the label. This would seem to indicate that what has already been intimated by The Journal—namely, that latalia rad. is a figment of the imagination—is a fact. The second noticeable thing about the label "formula," as distinct from the "formula" in the advertising matter, is that on the label we find there is opium in the preparation. Why is no mention made of the presence of this potent drug in the advertising matter?

To determine how nearly the present statements made by the Enteronol Company approximate truthfulness, our chemists were asked to examine the nostrum as it is now sold. Their report follows:

LABORATORY FINDINGS

An original package of enteronol tablets was purchased on the open market and submitted to the Association laboratory for examination. In general appearance, odor and taste the new tablets are similar to those previously examined. The formula for the old tablets was given as "Ipecac, Sub. nit. bismuth, Latalia rad., Camphor, Lupulin, Caffein, Rheum," and is still used in the circulars. But the label on the trade package no longer mentions "latalia rad." Since the presence of "latalia rad." in the old tablets, was questioned, and as new labels have ceased to display the name, it was thought possible that caffein and bismuth might now be constituents of enteronol, as the drugs are still mentioned in the new formula on the label. Accordingly, enteronol was examined chemically to verify the statements on the label regarding the presence of caffein and bismuth in the tablets.

The specimen submitted to the laboratory some time ago was found to contain neither bismuth nor caffein. By employing the same methods as were used before (the usual tests for detecting caffein and bismuth), neither caffein nor bismuth could be demonstrated. It is thus evident that this new specimen of enteronol, the statement on the label to the contrary notwithstanding, contains neither bismuth nor caffein—at least, in appreciable quantities.

One would think that the discrepancy between "formulas" and facts would prove of interest to the stockholders of the Enteronol Company, especially as we are told that the policy of the company is to have "practical men as stockholders." We are informed:

> "Therefore, we have physicians, advertising experts, printers, publishers, engravers, boxmakers, lithographers, druggists, lawyers, traveling salesmen, officers and men holding executive positions in various manufacturing and commercial corporations, editors of medical publications, bishops, clergymen and missionaries—men from all the fields particularly valuable commercially for our great enterprise."

Yet if the physician-stockholders do not care to concern themselves about the composition of the nostrum from the sale of which they derive dividends, it can hardly be expected that the boxmakers or traveling salesmen will be interested.

STOCK FOR SALE

Medical journals are not alone in being invited to participate in the exploitation of this nostrum, *vide* a circular letter from the Enteronol Company addressed "To Investors":

> "We offer at par of $10 each, 1,000 shares of our Guaranteed 7 per cent. Preferred Stock, cumulative dividends, payable quarterly . . . Profits on business done last year were 54 cents for every dollar expended . . . *We guarantee absolute security for your investment. Safer than a bank.*" [Italics ours.—Ed.]

We are told that at present the Enteronol Company manufactures two products: a castor-oil preparation, known as fig-ol, and enteronol. Very shortly, however, the company expects to "add seven equally efficient products."

> "The average cost to manufacture, ready to ship, a dollar's worth of these goods is less than ten cents."

> "In enteronol alone, the company has fortunes and the only thing needed to bring tremendous results and dividends of 100 per cent. is the proper amount of judicious advertising."

Here are some samples of the judicious (?) advertising:

> "One Christian missionary, the Rev. Paul Singh of Jubbulpore, India, testifies that he cured thirteen severe cases of Asiatic Cholera with a box containing less than thirty tablets" [of enteronol].

> "Wm. F. Oldham, bishop of Southern Asia, writes us that enteronol cured nine cases out of ten of Asiatic Cholera. Now just think of India and China with their 800,000,000 people who are dying by the thousands of a disease which we have the power to cure so easily."

How like a discourse by that delightful character of Mark Twain's—the visionary Colonel Sellers—this reads. As he said about his "Infallible, Imperial, Oriental Optic Liniment:"

> "Why in the Oriental countries . . . every square mile of ground upholds its thousands on thousands of struggling, human creatures—and every separate and individual devil of them's got the ophthalmia."

The prospective stockholder is told that an ordinary business concern reaches the limit of financial possibilities in a few years, but:

> "Not so with the Enteronol company—it is a mail-order business and the world is its territory."

Even so with Colonel Seller's "Optic Liniment:"

> " . . . It's a patent medicine whose field of operations is the solid earth."

And we are told elsewhere that "about four-fifths of the outstanding stock is held by the medical profession alone"!

And this stuff is advertised in medical journals!!

We are sometimes in danger of being too optimistic regarding the results of the propaganda for reform in proprietary medicines. Cases like this act as a corrective.

Correspondence

Eye Changes in Pellagra—Credit to Dr. Welton

To the Editor: In going over the report of the Conference on Pellagra at Columbia, S. C., November 3 and 4 (The Journal, November 13), I find that the reporter has given me credit for some conclusions which should rightly be credited to Dr. Carroll B. Welton of Peoria, Ill., namely, in the report of my paper (page 1661), that portion beginning, "Paralysis of the eye muscles is found in the later stage of the disease," and ending, "The finding of marked eye changes adds to the gravity of the prognosis in pellagra and indicates, in a large percentage of cases, an early fatal termination." These conclusions were quoted as a matter of general interest, due credit being given Dr. Welton, from a paper by him which appears in the same issue of The Journal, page 1636. I very much regret we have been put in this false position.

J. F. Siler, Captain Medical Corps, U. S. Army.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EOSINOPHILIA: ITS CAUSE AND SIGNIFICANCE: LITERATURE

To the Editor:—What is the most generally accepted view regarding the cause and significance of eosinophilia? Please refer me to the most recent literature on the subject R. L. S.

Answer.—Eosinophilia is apparently due to the entrance of some toxin into the blood but the nature of the exciting cause is not certainly known. Infections are usually accompanied by a relative or absolute decrease of eosinophiles. Exceptions are seen in scarlatina and malaria. Malignant diseases seldom show eosinophilia. Affections of the genitals are accompanied by eosinophilia. It is found in myeloid leucemia and in bronchial asthma, especially in the sputum. Eosinophilia is likely to occur in any case in which intestinal worms are present, particularly in uncinariasis and trichiniasis. The discovery of eosinophilia is of service in the diagnosis of helminthiasis, in distinguishing non-malignant from malignant disease of the viscera, etc. It tends to make the prognosis favorable in scarlatina, chlorosis, pernicious anemia, and after hemorrhage.

Following are titles of some of the most recent articles on the subject:

Stäubli, C.: Zur Kenntnis der lokalen Eosinophilie, *München. med. Wchnschr.*, 1906, lii, No. 43.

Simon, C. E.: Eosinophilia, *Internat. Clin.*, Series 15, Vol. iv.

Blumenthal, A.: Note sur l'eosinophilie hématique et locale, *Jour. méd. de Bruxelles*, 1906, xi, 737

Schinckel, R.: L'éosinophilie bulleuse, *Ann. Soc. de méd. de Gand*, 1906, lxxxvi, 237.

Lams, H.: L'éosinophilie considérée comme moyen de pronostic, *Compt. rend. Soc. de biol.*, Paris, 1907, lxii, 489.

Mosny, E., and Harvier, P.: Sur un cas d'éosinophilie méningée d'origine locale sans éosinophilie sanguine, *Arch. de méd. expér. et d'anat. path.*, Paris, 1907, xix, 273-281.

Widal, F., and Faure-Beaulieu: Eosinophilémie et histoéosinophilie, *Bull. et mém Soc. méd. d. Hôp. de Paris*, 1907, Series 3, xxiv, 966-968.

Folger, A. F.: Ueber lokale Eosinophilie (Gewebeosinophilie) bei zooparasitären Leiden, *Ztschr. f. Infektionskr . . . . d. Haustiere*, 1908, iv, 102-131.

Bazzicalupo: Connection between Eosinophilia and Antibodies in Serum, *Gazz. d. osp.*, March 22, 1908, xxix, No. 35; abstr. in The Journal A. M. A., May 9, 1908, l, 1575.

Lincoln, M.: Hodgkin's Disease with Eosinophilia; Report of a Case with Autopsy, *Boston Med. and Surg. Jour.*, May 9, 1908.

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REFRACTION FOR GENERAL PRACTITIONERS

To the Editor:—Please tell me where I can obtain a short or condensed work on simple refraction for family physicians or general practitioners, as I think every physician should be qualified to do refraction work. J. B. Dillon, M.D., Paragould, Ark.

Answer.—One of the best works is Thorington's treatise on the refraction of the eye. The subject is also satisfactorily treated in a number of ophthalmic text-books, such as Jackson's "Diseases of the Eye," Wood and Woodruff's "Commoner Diseases of the Eye," etc. It must not be assumed that even the elements of the "fitting of glasses" can be learned by the reading of any book, however earnestly pursued. Even the rudiments of practical refraction work, like the practice of auscultation, or cystoscopy or urinalysis, call for something more than mere literary knowledge. Indeed, the most important part of lens prescription consists in the use of mechanical appliances whose successful employment requires considerable practice with the aid and under the eye of a competent instructor. Unless one has obtained this practical instruction during one's college career it would be necessary to spend a month or longer in securing it before one could conscientiously undertake to prescribe glasses. The physician's education gives him a decided advantage over the optician and the "optometrist" in this work. It should be realized, however, that only painstaking and intelligent work will enable the physician to compete successfully with those who "examine eyes free." His eventual aim should be to consider, not only how to measure refractive errors, but, as a part of this work, to determine the balance of the eye muscles, the state of the ocular fundi (by the use of the ophthalmoscope) the condition of the anterior parts of the eye and, finally, to decide to what extent, if any, the neighboring organs and the general health are responsible for the ocular symptoms. These the physician would be able to do, while the optometrist could not. In other words, in doing this work the practitioner will find his collegiate training of decided value. He ought, with an equal amount of study and application, to make a much better and more effective refractionist than his competitor, the "doctor of optometry," who is really attempting to solve, without a medical education, problems that are essentially medical.

The Public Service

Medical Department of the Army

Changes for the week ended Nov. 13, 1909.

Murtaugh, J. A., capt., ordered to report at San Francisco, for examination for promotion.

Christie, A. C., Johnson, H. H., and Gostin, B. S., 1st lieuts., relieved from duty in the Philippines Division; will sail January 15, for San Francisco.

Kennedy, J. M., major, ordered to take temporary charge of the office of the Chief Surgeon, Dept. of California.

Webber, H. A., major, granted leave of absence for 2 months.

Dear, W. R., Wright, F. S., Treuholtz, C. A., Dunbar, L. R., and Davis, A. D., 1st lieuts., relieved from duty at their present stations; will proceed to San Francisco, and sail January 5, for Philippine service.

Wallace, G. S., 1st lieut., M. R. C., granted leave of absence for 14 days.

Jarrett, A. R., 1st lieut., M. R. C., relieved from duty at Fort Hamilton, N. Y.; will proceed home and then stand relieved from active duty in the Medical Reserve Corps.

Merrick, J. N., and Jenkins, F. E., 1st lieuts, M. R. C., relieved from duty in the Philippines Division; will sail January 15, for San Francisco.

Scott, H. O., dental surgeon, granted leave of absence for 2 months, on arrival in the United States.

Craig, E. J., dental surgeon, relieved from duty at Fort Leavenworth, Kan., and ordered to proceed to his home for annulment of contract.

Public Health and Marine-Hospital Service

Changes for the seven days ended Nov. 10, 1909:

Stoner, G. W., surgeon, granted 7 days' leave of absence from Oct. 30, 1909, under paragraph 189, Service Regulations.

Carter, H. R., surgeon, granted 15 days' leave of absence from November 10, 1909, on account of sickness.

White, J. H., surgeon, granted 4 days' leave of absence en route to station.

McIntosh, W. P., surgeon, granted 10 days' leave of absence from Nov. 10, 1909.

Oakley, J. H., surgeon, granted 1 day's leave of absence, Nov. 5, 1909.

Francis, Edward, P. A. surgeon, detailed as Assistant Director of the Hygienic Laboratory, effective Nov. 5, 1909.

Francis, Edward, P. A. surgeon, directed to proceed to Detroit, Chicago and Milwaukee, on special temporary duty.

Burkhalter, J. T., P. A. surgeon, granted 7 days' leave of absence from Nov. 8, 1909.

McCoy, G. W., P. A. surgeon, directed to proceed to Berkeley, Cal., on special temporary duty.

Creel, R. H., P. A. surgeon, on the arrival of Surgeon W. G. Stimpson, directed to proceed to Baltimore, and report to the medical officer in command for duty and assignment to quarters.

Spratt, R. D., P. A. surgeon, granted 20 days' leave of absence from Nov. 17, 1909.

de Valin, Hugh, P. A. surgeon, granted 1 month's leave of absence from Nov. 10, 1909.

Wollenberg, R. A. C., asst.-surgeon, relieved from duty at Naples, Italy, and temporary duty at Detroit, and directed to proceed to San Francisco, and report to Passed Assistant-Surgeon W. W. King for duty.

Atilles, P. del V., acting asst.-surgeon, leave of absence granted for 30 days from Aug. 18, 1909, with pay, and 15 days from Sept. 17, 1909, without pay, amended to read 30 days from Aug. 23, 1909, with pay, and 2 days from September 23, 1909, without pay.

Mason, W. C., acting asst.-surgeon, granted 5 days' leave of absence from Nov. 18, 1909.

Miranda, R. U. Lange, acting asst.-surgeon, leave of absence granted for 1 month from Oct. 8, 1909, without pay, amended to read 7 days from Oct. 8, 1909, without pay.

Richter, H. C., acting asst.-surgeon, granted 15 days' leave of absence from Oct. 15, 1909.

Terry, M. C., acting asst.-surgeon, leave of absence granted for 21 days from Oct. 1, 1909, with pay, and 9 days from Oct. 22, 1909, without pay, amended to read 21 days from October 2, 1909, with pay, and 2 days from Oct. 23, 1909, without pay.

Health Reports

The following have been reported to the Marine-Hospital Service, during the week ended Nov. 12, 1909:

SMALLPOX—UNITED STATES

Alabama: Mobile, Oct. 17-23, 1 case.
Georgia: Macon, Oct. 16-31, 3 cases.
Illinois: Chicago, Oct. 24-30, 2 cases.
Indiana: Muncie, Oct. 1-31, 9 cases.
Kansas: Labette County, Parsons, Sept. 1-30, 1 case; Scott County, 1 case; Shawnee County, Topeka, 2 cases.
Louisiana: New Orleans, Oct. 1-30, 1 case.
Michigan: Saginaw, Oct. 10-15, 3 cases.
Montana: Dawson County; Sept. 1-30, 2 cases; Silver Bow County, 1 case.
New York: Buffalo, Oct. 24-30, 2 cases.
Ohio: Springfield, Oct. 17-30, 6 cases.
Oregon, general, July 1-31, 21 cases, Aug. 1-31, 15 cases; Portland, Sept. 1-30, 8 cases.
Texas: San Antonio, Oct. 1-30, 1 case.
Utah, general, Sept. 1-30, 59 cases.
Wisconsin: La Crosse, Oct. 24-30, 1 case.

SMALLPOX—FOREIGN

Brazil: Bahia, Sept. 25-Oct. 8, 25 cases, 15 deaths; Pernambuco, Aug. 16-31, 11 deaths; Rio de Janeiro, Sept. 27-Oct. 10, 3 cases.
China: Shanghai, Sept. 25, present among natives.
Great Britain: London, Oct. 3-9, 1 case.
India: Bombay, Sept. 29-Oct. 5, 4 deaths; Madras, Sept. 25-Oct. 1, 2 deaths; Rangoon, Sept. 19-25, 1 death.
Italy, general, Oct. 11-17, 37 cases; Genoa, Oct. 1-15, 1 case; Naples, Oct. 11-17, 4 cases.
Mexico: Medellin, Oct. 18-24, present in vicinity; Monterey, 1 death; Soledad, 3 cases; Veracruz, Oct. 24-26, 10 cases, one case from Orizaba; October 26, 1 case on s. s. *Montevideo.*
Russia: Moscow, Oct. 3-9, 2 cases; Odessa, 12 cases, 5 deaths, Riga, Oct. 3-10, 1 case; Warsaw, Sept. 5-11, 2 cases.
Spain: Almeria, Sept. 1-30, 3 deaths; Barcelona, Oct. 12-18, 4 deaths; Huelva, Sept. 1-30, 14 deaths; Valencia, Oct. 9-16, 1 case; Vigo, 1 death.
Uruguay: Montevideo, Aug. 1-31, 8 deaths.

CHOLERA

Belgium: Boom, Oct. 26-30, 9 cases, 6 deaths, vicinity of Antwerp.
China: Amoy, Sept. 19-25, 22 deaths; Shanghai, Sept. 25, present among natives.

Germany: Andreischen, Nov. 1, 3 cases; Heydekrug, 1 case; Lallan district, 3 cases; Neiderung district; 3 cases.
India: Bombay, Sept. 29-Oct. 5, 6 deaths; Rangoon, Sept. 12-25, 10 deaths.
Java: Batavia, Sept. 12-25, 200 cases, 100 deaths.
Russia: St. Petersburg, Oct. 9-15, 266 cases, 111 deaths; Moscow, Oct. 3-9, 1 death; Riga, Oct. 10-16, 4 cases, 2 deaths.

YELLOW FEVER

Brazil: Para, Oct. 9-16, 4 cases, 2 deaths; Pernambuco, Aug. 16-31, 1 death.
Mexico: Merida, Oct. 20-21, 2 cases, 1 death.

PLAGUE—UNITED STATES

California: Contra Costa County, Oakland, Oct. 26, 1 case.

PLAGUE—FOREIGN

Brazil: Bahia, Sept. 25-Oct. 8, 18 cases, 13 deaths; Rio de Janeiro, Oct. 3-10, 1 case.
China: Amoy, Sept. 19-25, 38 deaths.
Japan: Kobe, Sept. 26-Oct. 2, 7 cases, 3 deaths.
India, general, Sept. 19-25, 4,650 cases, 3,595 deaths; Bombay, Sept. 29-Oct. 5, 15 deaths; Rangoon, Sept. 12-25, 5 deaths.

Marriages

Sir Wilfred Thomason Grenfell, M.D., Battle Harbor, Labrador, to Miss Anna MacClannahan of Chicago, November 18.

Eugene Albert Smith, M.D., Milwaukee, Wis., to Miss Daisy Arloine Lamoreaux of St. James, Minn., November 4.

Arthur Harris Johnson, M.D., Greensboro, N. C., to Miss America Seay, at the Shores, Virginia, November 2.

Robert Thrift Ferguson, M.D., Gaffney, S. C., to Miss Mary Steele Parrish, at Richmond, Va., November 2.

W. Elton McWhirt, M.D., Globe, Ariz., to Miss Maude Estelle Sherrick of Libertyville, Iowa, November 4.

Robert Henry Stephens, M.D., Treynor, Iowa, to Miss Margaret Ward of Council Bluffs, Iowa, November 4.

Charles Freeman Starr, M.D., Mason City, Iowa, to Miss Alma Taylor of Emmetsburg, Iowa, October 28.

William Sebald Keller, M.D., Cincinnati, to Miss Harriette Richardson of Glendale, Ohio, October 26.

Daniel Alden Barrell, M.D., to Miss Martha Louise McFarland, both of Auburn, Maine, November 5.

Christian P. Glahn, M.D., Palmyra, Mo., to Miss Nellie G. Holman of Hurdland, Mo., November 3.

Walter Freeman Brown, M.D., to Miss Mabelle Stewart Moore., both of Philadelphia, October 21.

Walter W. Covell, M.D., Brownlee, Neb., to Miss Martha B. Lund of Kearney, Neb., September 29.

Ralph Vernon Moore, M.D., Amboy, Ill., to Miss Catherine Sheridan of Freeport, Ill., November 3.

James Herbert Young, M.D., Newton, Mass., to Miss Irene Hamilton of Newark, N. J., October 28.

Charles P. Feeley, M.D., to Miss Matilda A. Sennott, both of Cambridge, Mass., November 2.

Robert J. Gregg, M.D., to Mrs. Gertrude H. Moorehouse, both of Dulzura, Cal., recently.

Robert Irving Bullard, M.D., to Miss Ellen Merriman, both of Springfield, Ill., November 4.

Deaths

Marcus Patten Hatfield, M.D. Chicago Medical College, 1872; for many years a member of the American Medical Association; professor of diseases of children in Chicago Medical College from 1875 to 1896; since 1898 professor of pediatrics in the Chicago Clinical School; clinical professor of pediatrics in the Medical Department of the University of Illinois; president of the medical board of La Rabida, the Jackson Park Fresh Air Sanitarium; attending physician to the children's department of Wesley Hospital and Chicago Protestant Orphan Asylum; author of several works on the diseases of children and hygiene and editor of the *Chicago Clinic*; died at his home, November 11, from tuberculosis, aged 60.

John Harvey Davisson, M.D. College of Physicians and Surgeons, Baltimore, 1876, and Cathell gold medalist of his class; a member of the American Medical Association; one of the organizers of the Southern California Medical Society and of the California Hospital Association; formerly president of the California State Board of Health; for four terms a member of the Los Angeles Board of Health; formerly professor of physiology and materia medica in the Fort Wayne (Ind.) College of Medicine; local surgeon at Warsaw to the Pennsylvania System, and secretary of the Surgeons' Association of the Pennsylvania Railway; died at his home in Los Angeles, November 1, from nephritis, aged 60.

Gabriel Grant, M.D. College of Physicians and Surgeons, New York City, 1850; a member of the American Medical Association; in 1852 a practitioner on the Isthmus of Panama; afterward health commissioner of Newark, N. J.; surgeon of the Second New Jersey Volunteer Infantry for more than three years during the Civil War, until forced to retire on account of a wound received in battle; died at his home in New York City, November 8, aged 83.

Augustus F. Anderson, M. D. Medical College of Georgia, Augusta, 1845; a member of the Medical Association of Georgia; assistant surgeon of the Sixth South Carolina Infantry, C. S. A., during the Civil War and for a number of years thereafter a member of the local pension board; a member of the legislature in 1878; died at his home near Lowryville, S. C., November 1, from heart disease, aged 91.

Aaron W. Riker, M.D. Albany (N. Y.) Medical College, 1856; president of the village of Fenton, Mich., for several terms a member of the village council, and for twenty years a member of the school board; for many years district surgeon for the Detroit, Grand Haven and Milwaukee Railway; died at his home in Fenton, October 31, from fatty degeneration of the heart, aged 78.

William M. McQuerry, M.D. Transylvania University, Lexington, Ky., for more than forty years a practitioner of Texas; a member of the State Medical Association of Texas, and a charter member of the Brown County Medical Society; a lieutenant in the Confederate service throughout the Civil War; died at his home in Zephyr, September 24, aged 76.

William Kirker Coleman, M.D. Medical College of Ohio, Cincinnati, 1881; a member of the American Medical Association, and a member of the local pension examining board; president of the Adams County (Ohio) Bank; and until recently superintendent of the State Hospital for Epileptics, Gallipolis; died at his home in West Union, November 5, aged 56.

Edward Taylor M. Rickard, M.D. Lincoln (Neb.) Medical College, 1897; College of Physicians and Surgeons, Chicago, 1906; of Weeping Water, Neb.; a member of the American Medical Association; while making a professional call near Weeping Water, November 8, was instantly killed by being crushed under his overturned automobile, aged 46.

Henry Palmer, M.D. University of Michigan, Ann Arbor, 1887; formerly a member of the Michigan State Medical Society; for several terms mayor of St. Johns, and health officer and supervisor of Clinton county; a member of the local pension board; died at his home in St. Johns, November 2, from diabetes, aged 52.

Robert W. Chapman, M.D. Kentucky School of Medicine, Louisville, 1886; a member of the State Medical Association of Texas and a practitioner since 1882; for several years a member of the medical examining board of the Second Judicial District of Texas; in 1895 elected state representative, and re-elected in 1907; died at his home in Geneva, January 4, aged 49.

Charles Frederick George, M.D. College of Physicians and Surgeons, New York City, 1865; a member of the New Hampshire Medical Society; associate physician at the Eliot Hospital, Manchester; died suddenly at his home in Goffstown, November 3, from cerebral hemorrhage, aged 68.

Luther A. Davison, M.D. New York University, New York City, 1882; of Hartford; a member of the Connecticut State Medical Society; while returning after making a professional call, November 1, had a cerebral hemorrhage, and died at the Hartford Hospital, aged 60.

Edward Aubert Besson, M.D. College of Physicians and Surgeons, San Francisco, 1900; a member of the American Medical Association; visiting physician at the French Hospital, San Francisco; died at his home in that city, November 4, aged 42.

Samuel D. Robbins, M.D. Tulane University, New Orleans, La., 1876; formerly acting assistant surgeon United States Marine Hospital Service at Vicksburg, Miss.; founder of the Mississippi State Charity Hospital; died in Vicksburg, November 4.

George C. Waiss, M.D. Rush Medical College, Chicago, 1894; a member of the American Medical Association; consulting gynecologist to the Hospital of St. Anthony of Padua; died at his home in Chicago, November 11, from appendicitis, aged 42.

Valentine Braun, M.D. Starling Medical College, Columbus, Ohio, 1853; a member of the Toledo school board and council, and in 1865 treasurer of Lucas County; died at the home of his niece in Toledo, October 19, from senile debility, aged 80.

William D. Ray, M.D. Tulane University, New Orleans, La., 1892; a member of the State Medical Association of Texas; local surgeon of the Southern Pacific Railroad at East Bernard for ten years; died at his home, September 26, aged 58.

Samuel Moses Post, M.D. University of Michigan, Ann Arbor, 1871; a member of the Michigan State Medical Society; a member of the local pension board; died suddenly at his home in St. Johns, November 6, from heart disease, aged 61.

Franklin B. Ives, M.D. Rush Medical College, Chicago, 1850; a practitioner and clergyman of Bureau County, Ill., for many years, and later a resident of California; died at his home in Long Beach, November 1, from senile debility, aged 86.

Andrew Franklin Brown, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1859; formerly of Laddonia, Mo.; president of the Citizens' Bank, Wentzville, Mo.; died at his home in that place, October 10, from gastritis, aged 70.

James Franklin Davis, M.D. Jefferson Medical College, Philadelphia, 1859; of Clinton, S. C.; a surgeon in the Confederate service during the Civil War; died at the home of his cousin, near Clinton, November 4, aged 74.

Edward Joseph Hogan, M.D. College of Physicians and Surgeons, New York City, 1867; a member of the American Medical Association; died at his home in New York City, November 7, from heart disease, aged 72.

Sylvester M. King, M.D. Hahnemann Medical College, Chicago, 1878; for many years a member of the local pension board of Monroe County, Iowa; died at his home in Albia, November 1, from pneumonia, aged 73.

Jacob Hamaker Drawbaugh, M.D. College of Physicians and Surgeons Baltimore, 1886; a member of the American Medical Association; died at his home in Shiremanstown, Pa., September 4, from tuberculosis, aged 50.

Charles Henry Burnham, M.D. Medical School of Maine, Brunswick, 1866; a member of the New Hampshire Medical Society; died at his home in Jefferson, N. H., November 3, from cerebral hemorrhage, aged 66.

Sarah Jane Williams, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1871; city physician of Springfield, Mass., in 1872; died in Boston, Sept. 27, 1908, from general paralysis, aged about 69.

Lathrop Russell Charter, M.D. Castleton (Vt.) Medical College, 1841; a charter member of the West Virginia State Medical Association; died at his home in West Union, September 28, from acute nephritis, aged 92.

Richard H. Rhoden, M.D. Missouri Medical College, St. Louis, 1886; a member of the American Medical Association; surgeon to the Fremont (Neb.) Hospital; died at his home in Fremont, October 30, aged 47.

Styles M. Taylor, M.D. Memphis (Tenn.) Hospital Medical College, 1892; for twenty-seven years a practitioner of Texas; died at his home in Yale, near Mount Vernon, September 10, from typhoid fever, aged 55.

Morris Lewis Davis, M.D. Starling Medical College, Columbus. Ohio, 1879; New York University, New York City, 1884; died at his home in Agency, Iowa, May 21, 1908, from gastric ulcer, aged 63.

Bert Jerome Longwell, M.D. University of Nashville (Tenn.), 1903; of Wheeling, W. Va.; died in St. Joseph's Hospital, Logansport, Ind., October 20, from nephritis, aged 36.

James F. Irvin, M.D. University of Pennsylvania, Philadelphia, 1853; died at his home in Des Moines, September 25, from cerebral hemorrhage, aged 80.

L. Joseph Struzynski, M.D. University of Dorpat, Russia, 1850; died at his home in Joliet, Ill., November 5, from senile debility, aged 86.

Silas James Chesebrough, M.D. Albany (N. Y.) Medical College, 1844; is reported to be dead at his home in Syracuse, N. Y.

Lemier Congdon, M.D. University of Buffalo (N. Y.), 1852; died in his rooms in Springfield, Mass., November 4, aged 74.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

MEDICAL ORGANIZATION IN VERMONT AND NEW HAMPSHIRE

By J. N. McCormack, M.D.
Chairman of the Committee on Organization
BOWLING GREEN, KY.

I have never had a more delightful experience, or come in contact with a more cultivated profession and people, than during the sixteen days' itinerary in Vermont and New Hampshire. The Green and White Mountain lake and valley regions may have less of grandeur and sublimity than Switzerland, but they rival it in picturesque beauty and excel it in fertility. In fact, but for the lack of the loftiest, snow-capped peaks and glaciers, and the absence of women from the fields and other out-of-door labor, the small valley and hillside farms were so carefully cultivated, the houses, gardens and orchards looked so neat, tasteful and prosperous, and industries of every kind were so varied and profitable that one was constantly reminded of that beautiful and thrifty country. It was in all of its glory, too, in the latter part of September and the beginning of October, with ideal weather most of the time, and the rich coloring of the forests and fields was beyond any power of my pen to describe.

The public meetings were admirably planned and advertised, the suggestions of Dr. Green having been followed in both letter and spirit, and taken one with another, the audiences and discussions were better and more appreciative than in any other section I have visited. Governor Quimby presided at one of the meetings in New Hampshire, U. S. Senator Burnham at another, and congressmen, judges and other leading officials or citizens took an intelligent and often an enthusiastic part in the discussion at each appointment. The standards of education are higher and more general here than in the West and South, and I have found that the people are responsive to reform just in proportion to their intelligence.

Except in Burlington, Concord and a few other places, the medical meetings in the afternoon were not so well arranged or attended. In fact, one could not avoid the impression that there was danger of the public becoming more progressive than the profession in all these matters, just as the pews often seem to lead the pulpit in moral reforms. For instance, at his great marble works a little way out from Rutland, Governor Proctor has provided for his 3,200 employees and their families one of the purest and best protected of water supplies, model schools, churches, a hospital, library, Y. M. C. A. building, and isolation hospital for *consumptives*, in a broad way which might well be held up as an object lesson for employers of labor everywhere, both for its humanitarian and economic advantages. This wise young layman had no doubt obtained much of his first inspiration from Drs. Caverly and Holton and their associates on the State Board of Health, but he had worked out and demonstrated the practical value of health and life in a way that gave me much to think over, as no doubt has been the case with every medical man who comes in touch with his progressive methods. Other instances like this, only a little less conspicuous, might be cited in abundance.

The lack of medical organization, in the sense in which we understand it, and for which I am striving, was as evident as it was unaccountable. Personally and collectively the profession here is of the highest grade and composed of the most cultivated men with whom I have ever come in contact, and I have never found any more warm-hearted and approachable. Their leaders are not better than the leaders of the West and South, but they have a far smaller percentage of low-grade men than are seen elsewhere. This grows out of the facts that it is an older civilization than any other in this country that escaped the ravages of the civil war, that it has more wealth, and better general education, and especially that it never had the multiplication of medical schools and the preponderance of low-grade, cheap schools which have so cursed the West and South until recent years, and which still exist in some sections. Though the individual standard is so high, though the work in the state societies and boards is in the hands of men whose abilities are recognized everywhere, and though the latter have accomplished so much in many lines, I found but one society which meets as often as once a month, most of them meeting quarterly or semiannually, and often with but half or two-thirds of the eligible physicians in the membership. In one of the most important cities in Vermont, one of great historic interest and cultivation, and with a large medical population, the county society meets once a year, when they can get a quorum, which they had not had for two years. In New Hampshire, probably by an oversight, membership in the state society may be retained without joining the county society, a mistake which was made in several other states early in the reorganization movement, and only remedied after it had produced inevitable confusion and discord. The main difficulty seemed to be that even the leaders of the profession had not caught the spirit and purpose of organization, with county societies and weekly or semi-weekly meetings and postgraduate studies as the foundation and main factors in bringing the physicians of each community together, with the opportunity of knowing each other better and ultimately bringing about in our more or less discordant ranks the good fellowship and cooperative spirit which has always existed in the legal profession. Boards of health, medical boards, hospitals, and practical public laboratories are far more important to the people than courts, just in proportion as health and life are more important than any mere property interests, but because lawyers naturally associate with each other in their every-day work, with the breadth and good fellowship resulting therefrom, they have always had a prominence and guiding influence in public affairs, local, state and national, which we have never had, and ought not to have, until we can get together in each county and community and artificially reproduce the harmonious conditions which exist naturally in the legal profession.

The results of lack of organization were in evidence on every hand. Medical fees were surprisingly low, and especially so when the high grade of the profession and the cost of living and equipment are considered, and poverty in the rank and file of the profession exists to an extent not recognized by its leaders or the people. As is my custom, I tested this by careful inquiry in typical counties as to the percentage of physicians who own their homes and are comparatively free from debt at middle life, or who could attend their state and national associations, or go away for a postgraduate course or a vacation, without injustice to their families, and usually found it very small. Discord was as marked and unpleasant in several counties as I have ever found it elsewhere. Christian Science and similar fads flourish; a larger percentage of the cream of the practice seems to have passed out of the hands of the regular profession than in any other part of the country, and there seems no end to this drift unless our profession and especially our schools—still distinctly its least progressive element, in spite of the high character and ability of those comprising the faculties—can be aroused to the importance of occupying the field of psychotherapy, mechanotherapy, and similar therapies in such a scientific way as will leave no place for faddists and quacks. I have found no other profession more responsive to appeals for better things than that here, or more capable of doing them, and as they at once took up the postgraduate work, the plans for frequent public meetings and other progressive methods in almost every county, I shall be disappointed if most excellent results do not follow.

My thanks are due to Drs. Beecher and Sullivan, secretaries of the Vermont and New Hampshire state societies, respectively, and to the local committees having the meetings in charge at each appointment for arrangements which were so complete as to leave nothing to be desired, and to both the profession and people for a reception and for hospitality as cordial and charming as it was constant.

Bismarck, N. D., Nov. 6, 1909.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Third Month—Fourth Weekly Meeting

Chicken-Pox, Varicella

Etiology: Contagiousness, age, transmission, incubation.
Symptoms.
Diagnosis: Differentiate from smallpox, impetigo contagiosa.

Acute Infectious Diseases Accompanied at Times by Eruptions

Typhoid Fever: Characteristic rash. Erythema, urticaria, herpes, sudamina, desquamation after typhoid.
Typhus Fever: Characteristic petechial eruption.
Influenza: Erythema, urticaria, herpes, sudamina.
Dengue: Primary and secondary exanthemata.
Malaria: Herpes, erythema, urticaria, purpura, pigmentation.
Epidemic Cerebrospinal Meningitis: Characteristic petechial rash, herpes.
Rheumatic Fever: Sudamina, erythema purpura, erythema nodosum.
Serum Eruptions: Frequency. Date of appearance. Character of eruption, urticarial, erythematous, vesicular, petechial. Distribution of rash.

Monthly Meeting

Differential Diagnosis of Smallpox.
Bacteriology of Scarlet Fever, of Smallpox.
Prevention of the Spread of the Exanthemata; Vaccination and Quarantine; Treatment of the Patient; Disinfection.

Society Proceedings

COMING MEETINGS

American Physiological Society, Boston, December 28-30.
Southern Surg. & Gynecological Assn., Hot Springs, Va., Dec. 20-21

AMERICAN PUBLIC HEALTH ASSOCIATION

Thirty-seventh Annual Meeting, held at Richmond, Va., Oct. 19-22, 1909

The President, Dr. Gardner T. Swarts, Providence, R. I., in the Chair

The officers elected were given in The Journal, Nov. 6, 1909, p. 1573.

Second Decennial Revision of International Classification of Causes of Death

Dr. Cressy L. Wilbur, Washington, D. C.: The second decennial revision of International Classification of Causes of Death is the most important event that has occurred affecting vital statistics during the past year, and the possibility of twenty-three nations joining in this revision reflects much credit on the American Public Health Association. We are at the beginning of a great undertaking, namely, the preparation of a national nomenclature of diseases and causes of death. I believe that the most important practical measure which can come up for consideration next year will be the preparation of a series of uniform statistical tables relating to births, stillbirths, deaths, sickness, marriages, and divorces for use in the federal, state and municipal reports and bulletins. It has been largely a matter of speculation to know whether the figures taken from different reports were comparable or not. I would propose to the officers of the association and also members of the council of the section on vital statistics that they cooperate by the appointment of special committees, whose work can be aided by the Bureau of the Census in the preparation of uniform tables to be used in registration reports.

A complete agreement was had as to the form of questions for the cause of death. The note on the face of the blank is as follows: "State the disease causing death, or in deaths from violent causes, state first the means of injury; second, whether accidental, suicidal or homicidal." As to the changes from the previous classification, I have been notified that

Census Bulletin No. 104 has been printed and two copies have been sent to me. This contains the title of the classification, and each title which has not been changed or modified from the former series is noted by an asterisk.

Management of Milk-Borne Outbreaks of Typhoid

Dr. C. V. Chapin, Providence, R. I.: An outbreak of typhoid fever occurred among the customers of a certain dairy in Providence. The only evidence that the milk supply is the cause of typhoid fever is in the excess of patients among the persons supplied. Out of 600 dealers in Providence, 155 have had one or more cases of typhoid fever during the last four years. In a study of sixteen outbreaks the distribution of the cases in point of time suggested that the infection was not continuous, but depending on a single distribution of the milk. As shown by Davies, Craig, and others, carriers cause infection only in an irregular and intermittent manner. The occurrence of two or three cases in a route of from 100 to 1,000 families within a week requires careful investigation. When the milk supply is found to be defective, and the source not determined, it should be shut off or Pasteurized, and when typhoid is found among those who handle the milk the patient should be removed from all contact with it. Precautionary measures should be carried out for three or four months from the beginning of the last case.

Campaign Against Yellow Fever on the Isthmus of Tehuantepec

Dr. Francisco Valenzuela, Mexico City: The importance of the international traffic across the Isthmus of Panama has brought to that territory a number of nonimmunes, which has led to a great increase in the number of victims. The campaign according to the doctrines of Finlay was organized under Dr. Garcia at the city of Tehuantepec in May, 1904, and subsequently extended to the whole of the isthmus. The excellent results obtained are a matter of congratulation to all. The passenger traffic is under the charge of sanitary agents on board the cars of the Tehuantepec Railway. When a passenger is found to be ill the agent investigates the case, taking into consideration the sanitary condition of the country from which the sick person comes. A report is forwarded to the sick man's destination as well as given to the agent on the train with which the passenger desires to connect. This traveling agent collects all the news possible, thus enabling the chief of the service to receive daily and timely reports of all cases of an alarming character. Isolation of the sick, destruction of the mosquitos by fumigation and the covering of ponds and swamps with oil to destroy the larvæ are the three principal factors in suppressing yellow fever.

Scope and Value of Lectures

Dr. Herbert D. Pease, New York City: Our form of government places the responsibility of government on the citizens as a whole. Never in our history has the public been more alive to the details of administration than at present. In my opinion, we may say that the cardinal principles in educational work in hygiene are as follows: A simpler statement of the known, the unknown and the debatable. The manner and method of expression must be secondary but they are nevertheless of vital importance for success. The speaker must insist on getting the audience and then he must hold them or he is inefficient. Without money the task is greater, but is by no means hopeless. In the pioneer work against tuberculosis those who have had the least money have made greatest progress because lack of means has necessitated more volunteers. To be assured of an audience one must advertise and continue to advertise by special letters, handbills and multiple letters, and even newspaper advertisements. In advertising the subject of a lecture should at all times receive the greatest emphasis; then follow with the names of the speakers, allowing the time and place to come after this. Every epidemic should be used as an opening gun in the campaign against that particular disease. The larger advertisements should be put out first and later followed with the cards, multiple letters, etc. First should be presented in the lecture the problems already solved, next those not entirely solved, and third topics about which there is controversy. Pictures or lantern slides should be used in effective lectures on certain subjects. These slides may be interspersed with moving picture slides, which adds a certain amount of interest to the program.

(*To be continued*)

UTAH STATE MEDICAL ASSOCIATION

Fifteenth Annual Meeting, held at Ogden, Sept. 21-22, 1909

(Concluded from page 1679)

Mistakes in Tabes Dorsalis

Dr. W. Brown Ewing, Salt Lake City: At the outset I must disclaim any intention of finding fault with the surgeons or the specialists in any line of medicine, but insist that extreme care should be taken in making the initial examination of the patient, so as to avoid errors. This disease occurs between the ages of 30 and 50. The classic symptoms should be well-known and easily lead us to a diagnosis in typical cases, but a number of unusual symptoms occur in some cases. There is liability of confounding the various crises of tabes dorsalis with gastric ulcer, diseases of the throat and rheumatic complaints. Often the early symptoms of the disease are referable to the bladder, such as cystitis. The attention of the surgeon should be called to tabetic joints, which may closely resemble various surgical conditions. I have long had a settled conviction that there is great danger in the overtreatment with mercury in patients giving a syphilitic history, and there is liability of spinal disease following excessive use of this drug, the symptoms of which are mistaken for the symptoms of tabes. A masterful inactivity is often the best treatment. As a rule, it is unwise to operate on tabetic joints, since the trophic changes are such that good results cannot be expected.

DISCUSSION

Dr. P. E. Jones, Salt Lake City: There is scarcely any other disease of the spinal cord whose diagnosis can in most cases be made with such uniform certainty as tabes dorsalis, and yet it is a notable fact that this disease is more frequently mistaken for various local disorders than perhaps any other. I have seen a diagnosis of gastric ulcer, or of appendicitis, made and the patient sent to the operating room with no visceral disease present at all. I have seen patients with painful joints and extremities kept on the salicylates for weeks under the mistaken diagnosis of rheumatism. I have seen patients with irritable bladder and disturbances of micturition treated for a local trouble when the seat of the disease was in the cord. The essential point is to think at once of the possibility of tabes and look for the distinctive objective symptoms, the principal ones being absence of tendon reflexes and immobile pupils. When the full ataxic stage of the disease has been reached, even "he who runs may read." Dr. Ewing calls attention to the possible ill-effects of the long-continued use of mercury. I have been long convinced of the ill effects of this potent but toxic drug.

Dr. Frederick Clift, Provo: I believe that the early symptoms of tabes are often overlooked and that many a patient goes on for years under treatment for some other ailment until the disease is so far advanced that little, if anything, can be done to arrest its progress or mitigate its effects. Mercury has its indications, but I, too, am inclined to think that great harm may result from its prolonged use in this disease.

Dr. A. C. Behle, Salt Lake City: I recall one case of tabes dorsalis in which a diagnosis of gastric ulcer with stenosis was made. The diagnosis was made by a general practitioner but the patient was referred to a prominent surgeon and the diagnosis was accepted without further examination. Gastroenterostomy was performed for the relief of the condition, and a secondary operation for "vicious circle." The patient remained in the hospital for thirteen weeks afterward, but still continued to suffer distress in the region of the stomach and had other gastric symptoms. On seeing the case I was satisfied that the patient was suffering from tabes, but in order to verify my conclusion I sent him to Dr. Ewing for a diagnosis, requesting the man to say nothing regarding the history of the operations he had undergone. Dr. Ewing promptly made a diagnosis of tabes and gave an unfavorable prognosis. While we may recognize the disease as incurable, I think that we should give our attention to cystitis and urethral irritation, for these patients want relief from these distressing symptoms of the disease. The picture of mental dejection we so often see will change to a relatively peaceful state of mind if these troublesome symptoms are given proper attention, for when we ignore these ailments it tends to encourage our patients to seek the advice of charlatans and the various mental healing sects.

Dr. S. L. Richards, Salt Lake City: A man was sent to me from the southern part of the state. While branding cattle he suddenly felt a peculiar sensation in his lower extremities with decided weakness. In a short time he was unable to use his legs. A diagnosis of hemorrhage of the cord was made. I began to get shaky about my diagnosis when I took him to a specialist who expressed the opinion that the patient had all the cardinal symptoms of tabes dorsalis. The patient was sent back home with an unfavorable prognosis. Four months later I learned that he had entirely recovered and is now perfectly well. The sudden mode of onset made me think of hemorrhage of the cord rather than tabes, for the latter comes on gradually, whereas in this case the paralysis developed within ten days from the onset of the symptoms.

Dr. G. Robinson, Provo: I have seen this disease confused with multiple neuritis. Recently a patient came to me with a diagnosis of tabes, but the history of the case showed it to be one of multiple neuritis of alcoholic origin. No examination was made of the reflexes to determine the presence or absence of the reflexes. This should not be overlooked. The Argyll-Robertson pupil is characteristic of tabes. An unfavorable prognosis was given, yet the patient has continued to improve. Wrist-drop and foot-drop, which were present when I first saw the patient, have practically disappeared, and the only symptom present of tabes is absence of the knee-jerk, which is not a symptom of unvarying importance as it may occur in healthy individuals. The disease is often confused with anterior poliomyelitis. We should exhaust every means at our command in making a diagnosis, but we should not rely too much on any one or two symptoms, as we may be misled.

Dr. C. F. Osgood, Ogden: Does Dr. Ewing know of any invariable index for determining the time when mercury should be suspended in any given case? How are we to know when enough has been given and more would work mischief?

Dr. W. Brown Ewing, Salt Lake City: My plea is for more care in the making of the diagnosis. The discussion emphasizes my experience. I never saw a case of wrist-drop in tabes. One may find deformities of the foot and relaxation of the muscles and tendons around the joints, with a tendency to clubfoot, but I never saw a case of true wrist-drop or foot-drop in this disease. I confess that I do not know when to discontinue the use of mercury; that is, I do not always know how far to push the drug. In the treatment of the third stage of syphilis I have used antisyphilitic treatment of the most intense character and pushed it to the limit, but I have never yet gone over eight days in the use of mercury without producing constitutional effects of the drug.

New Observations on Spinal Anesthesia

Dr. A. W. Morton, San Francisco: The technic is that which I have employed since 1900. My experience with spinal anesthesia covers 4,000 cases. I have demonstrated the method that I use in producing spinal anesthesia in all the principal cities in this country, and in many foreign medical centers. Tropococain is prepared in doses of 1 grain each, which is sterilized by exposing it to a temperature of 300° F., dry heat, for fifteen minutes. The sterilized drug is placed in small glass tubes, and closed by fusing the end of the tube. The tube may be closed with a cork dipped into sterilized paraffin. The needle used is of steel wire No. 9 gage, 3½ inches long, with a short bevel, and is so made that it can be readily attached to an ordinary Luer glass syringe. As to the technic, the needle is introduced at a point between the third and fourth lumber spaces, in the median line, and is pressed steadily through the tissues into the spinal canal. The cerebrospinal fluid escapes through the lumen of the needle and flows into the barrel of the syringe. Diminished resistance, after the needle has been inserted the proper distance, indicates that the spinal canal has been reached. The syringe has the dose of tropococain already in it, with the piston closed. The syringe is then attached to the needle and the piston is slowly withdrawn; as this is done, the cerebrospinal fluid will pass into the barrel of the syringe, dissolvign the tropococain in the cerebrospinal fluid, which is immediately returned to the subarachnoid space by pressing the piston in. Within 10 minutes, with the maximum dose of tropococain (1½ grains), analgesia extends all over the body. When it is desired to produce analgesia in the upper part of the body, a syringe of 20 c.c. capacity is used, the required amount of cerebrospinal fluid drawn off into the syringe and, after the solution of the drug is effected, returned to the spinal canal as already described. The tropococain dissolves more quickly if the barrel of the syringe is rotated from side to side but without withdrawing the needle. As a rule, analgesia lasts from an hour and a half to two hours, and is so deep that operations may be undertaken with the satisfaction of knowing that the sense of pain is totally abolished. If for any reason the operation is to be prolonged beyond the usual time, the dose may be repeated according to the technic already described. Tropococain has a local action, passing directly into the nerves at the spinal centers, and it acts on the body as high as it passes into the cerebrospinal fluid. Very little enters the circulation proper and it is practically free from toxic effects. It paralyzes the nerve cells that carry the sensation of pain. It has little disturbing effect on the tactile, heat or motor cells of the body. It is especially indicated in organic disease of the heart, lungs, or kidneys, where a general anesthetic is contraindicated. It prevents shock. Its use is indicated in the aged. There is practically no disturbance of the gastrointestinal tract. It is indicated in operations on the tongue and superior maxilla; in fact, any operation about the buccal cavity where there is danger of pus and blood entering the larynx. It is a satisfactory anesthetic in removal of goiters. In obstetric work it produces complete relaxation of the cervix and perineum, and does not interfere with uterine contractions: for this reason it prevents lacerations and hastens labor, which is painless. The after-effects are not alarming. If the heart's action becomes inhibited under its influence, the administration of the proper dose of adrenalin, or 1/100 of a grain of atropin is indicated. Vomiting occurs in about 3 per cent. of all cases and usually occurs about ten minutes after the injection is made. Headache occurs but is rare. It is relieved by having the patient maintain the reclining position with an ice-cap applied to the head.

Value of Early Diagnosis in the Treatment of Epidemic Cerebrospinal Meningitis

Dr. R. C. Smedley, Salt Lake City: Through the efforts of Flexner the profession has been led to a better understanding of the pathology of this disease; he has placed within our reach a therapeutic measure of unquestionable efficacy. An early and positive diagnosis of this disease should be made by lumbar puncture. If the cerebrospinal fluid withdrawn is cloudy, give the first full dose of serum at once without waiting for the bacterial examination, although further doses are only to be given if the *Diplococcus intercellularis* is found in the cerebrospinal fluid. The serum is of no value in other types of meningitis. At every dose give as much as possible—the amount given, however, should equal the amount of cerebrospinal fluid withdrawn. Repeat the dose every twenty-four hours or at shorter intervals; repeat daily till four full doses have been given. In all cases, if diplococci persist after four full doses, continue injections until they disappear. After that the treatment depends on the requirements of the case. A medium-sized aspirating needle is introduced into the spinal canal between the third and fourth lumbar vertebræ. If the fluid withdrawn is clear, it does not necessarily rule out the existence of epidemic cerebrospinal meningitis. The addition of one-third alcohol (95 per cent.) will cause marked turbidity if meningitis is present. If the fluid is turbid place it on ice for a short time to favor clot formation or centrifuge and examine with a microscope. The cover-glass preparation is stained with aqueous saturated solution of methylene blue. If more than one lymphocyte or polynuclear leucocyte is found in the field it indicates leucocytosis, which points to the probability of cerebrospinal meningitis. In the early stage of the disease the *Diplococcus intercellularis* is found in varying numbers, mainly free; after the first injection of the serum these micro-organisms partially disappear, and after subsequent injections tend to disappear entirely. The serum must be brought into direct contact with the spinal fluid. It is of practically no value given subcutaneously. Improvement occurs as a rule after the first injection. The temperature falls and some cases show a tendency to terminate by crisis. The mind clears up, but rigidity of the spine persists for some time. Flexner's serum reduces the mortality of this disease to a figure somewhere between 10 and 25 per cent., as compared with from 57 to 91 per cent. without the serum.

DISCUSSION

Dr. W. R. Tyndale, Salt Lake City: The value of an early diagnosis must be apparent to every one. We should always have the symptoms of this disease in mind, since sporadic cases are easily overlooked when epidemics do not exist. The early symptoms of all acute, infectious diseases are very much the same, but high fever, vomiting and retraction of the head should make us be on the alert, for if the serum treatment of this disease may be relied on to accomplish anything it should be administered early in the disease and before serious destructive changes have taken place.

Dr. W. R. Calderwood, Salt Lake City: I believe that the mortality of this disease can be materially reduced by the early and intelligent use of this serum. Too much stress cannot be laid on making an early diagnosis. Flexner's serum seems to be the remedy that promises the best results.

Dr. Ralph T. Richards, Salt Lake City: Dr. Smedley suggests that the needle employed for aspirating the suspected cerebrospinal fluid be introduced between the third and fourth lumbar vertebræ. You will often fail to obtain the fluid in this location, but if the needle is inserted between the second and third lumbar vertebræ, you will seldom fail to find it.

Dr. J. T. Sharp, Salt Lake City: In 1906, I saw many cases of this disease and came to the conclusion that the mortality of epidemic cerebrospinal meningitis is very high. In some cases the early symptoms are difficult to recognize; in some the nervous symptoms are of the most violent character. The point I desire to make is this: I was struck by the pathologic picture disclosed by the autopsy. I had the privilege of doing several of these autopsies, and as I took the skull-cap off I was impressed with the utter helplessness of trying to combat a disease so destructive in its consequences—pus, blood and leucocytes were everywhere, the membranes were congested, adherent and oozing with pus. If Flexner's serum is really curative, and I have no doubt it is, it should rank as one of the great discoveries, and if there is just one horse that is generating this serum, my earnest hope is that he will not die.

Dr. Philo E. Jones, Salt Lake City: Does Dr. Smedley know of any ill effects that are likely to follow the repeated introduction of the needle into the spinal canal? I have read that these subdural injections are not wholly devoid of danger.

Dr. R. C. Smedley: The best place to introduce the needle into the spinal canal is a matter of choice. I am sure that the fluid can be obtained at a point between the third and fourth lumbar vertebræ. Some prefer the second interspace. In view of the grave pathologic lesions found beneath the skull-cap, it is important that the serum be brought into direct contact with the subdural injection. I have not had my attention drawn to any ill effects following the injection of the serum, even when these injections are repeated. But I believe that cases have been reported of sudden collapse following these spinal injections. While in Boston I saw several patients who were treated as long as six weeks with the serum, daily injections being made or on alternate days, and with no bad results. Now and then medical literature reports a fatality following the use of the serum. Possibly the position of the patient may have something to do with such accidents. I believe that faulty technic may throw suspicion on some remedial measures that are otherwise safe and efficient.

Degenerative Changes in the Spinal Cord in Pernicious Anemia

Dr. J. R. Morrell, Ogden: Lack of uniformity in the symptoms of pernicious anemia suggests an underlying infecting agent, having a marked hemolytic power whose toxins cause the gastric and intestinal disturbances and degenerative changes in the cardiac musculature and in the central nervous system. The pathologic changes in the spinal cord bear no direct proportional value to the intensity of the clinical symptoms. In well-marked cases the degenerated areas of the cord can be seen with the naked eye, appearing as darker areas in the white substance of the cord. In the seven cases studied and made the subject of this report, the regions of the cord involved were not constant, but varied considerably. In five out of six cases of pernicious anemia, pathologic changes in the cord were demonstrable, and in four of these they were quite extensive. The structural changes were most marked in the cervical region. In two cases there was considerable ataxia during life, and in one, associated for a time with marked spasticity. All cases showed at some time more or less nervous involvement.

DISCUSSION

Dr. W. Brown Ewing, Salt Lake City: In the description of the pathologic findings of the cord in pernicious anemia there seems to be a striking similarity to those found present in syringomyelia. The regions of the cord involved, as illustrated by Dr. Morrell, are certainly much like the findings in syringomyelia, and some of the symptoms are likewise very similar. The involvement of the cord is considerably more extensive than I had supposed a post-mortem examination would disclose.

Dr. J. R. Morrell: I did not mention that changes in the cord may occur independently of pernicious anemia. What we have grown to regard as typical lesions may exist without any appreciable changes in the blood.

Puerperal Fever

Dr. E. I. Rich, Ogden: Puerperal fever is an infection carried to the parturient woman by an infected agent. It is generally a mixed infection. The streptococcus is most frequently found and is present in nearly all serious and fatal cases. The gonococcus comes next. The staphylococcus and colon bacillus and a number of putrefactive anaerobic bacilli are frequently found, and in rare cases the Klebs-Loeffler bacillus and the pneumococcus. The recently emptied uterus presents a particularly favorable field for the invasion and growth of micro-organisms. As to the sources of infection, bacteria must either be present in the passages to the uterus or must be introduced from without. The gonococcus is the only pyogenic organism that can live and thrive in the normal vaginal secretion of a pregnant woman. The infecting organism invades the walls of the uterus along the lymphatics or veins and is thus conveyed to neighboring tissues and organs. In making a diagnosis, too many jump at the conclusion that fever following childbirth means infection. The entire body should be carefully examined and a diagnosis arrived at by a process of exclusion, after first thoroughly unloading the bowels. In the last 300 deliveries I have not once used a douche because of fever, and in only four or five cases in which lacerations were present. Of course, if the uterus is filled with infected blood clots or putrid material, after careful cleaning out is done with the hand or a large, dull curette, there is no valid objection to irrigation. In puerperal septicemia the uterus must be cleared of all necrotic and putrefactive material without disturbing the underlying protective wall of leucocytes. In virulent streptococcus cases Nature does not have time to form a protective wall of leucocytes. In these cases we must rely chiefly on constitutional treatment, as the poison is beyond our reach. One thorough irrigation with hot normal salt solution (3 gallons), followed by at least ½ gallon of 50 per cent. alcohol and sterile hot water, with one teaspoonful of iodin to a quart of this solution may be employed. Hysterectomy in acute puerperal sepsis is now generally condemned.

Nose and Throat Conditions of Interest to the General Practitioner

Dr. R. R. Hampton, Salt Lake City: The location of the tonsil is such that bacteria entering the oronasal cavity, from the day of birth, are directed toward the tonsillar crypts, which act as receptacles or culture tubes in which bacteria of every variety, entering the fauces, may be cultivated. The mucus in the crypts serves as a culture medium. The glands which furnish this mucus are located just outside the tonsillar structure. These peritonsillar mucous glands are most numerous at the base of the tonsil near the bottom of the crypts, which explains how tonsillar abscesses at times follow tonsillitis. Bacteria multiplying in the crypts, elaborate vaccines which are taken into the tonsil by the lymph currents, and thus entering the system they are absorbed. These toxins cause the tissue cells to generate opsonins which prepare the pyogenic bacteria for phagocytosis. The salivary corpuscles now seize the bacteria, and together they are pressed out into the oral cavity in the act of swallowing. In swallowing, the superior constrictor muscles compress the peritonsillar glands and force the mucus into the crypts, and this same force or pressure forces the contents of the crypts into the orval cavity. The tonsil, with its crypts, makes it possible for the system gradually to absorb the vaccines from the crypts, and thus produce immunity without systemic toxemia. The tonsil is most needed during the first three years of life; it probably functionates until puberty or later. Tonsillar disease is often insidious and goes unrecognized until the damage to the neighboring organs, and often to the general health of the patient, is almost irreparable. The diseased tonsil is more or less hypertrophied in all parts, and while not obstructive as a rule, they are sometimes very large, extending upward and backward often as far as the Eustachian tube on which they may press, interfering with the air passage and blood circulation of the ear and causing disturbances of function. The drainage of these diseased tonsils is extremely faulty, and the result is that pent up secretions become foul smelling and exceedingly irritating. Whatever the function of the tonsil is we do not know, but we do know that a diseased tonsil is a menace to the general health. Health is impaired by direct infection. Tuberculous glands of the neck and often pulmonary tuberculosis may be traced directly to diseased faucial tonsils. Instead of injury to the voice, the only effect of removal of the tonsils is a decided improvement in the voice. Middle ear deafness may have its origin in at least three ways: from the extension to the tympanum of inflammatory conditions in the adjacent tissues of the Eustachian tube or pharynx; to alterations in the vascular supply in that cavity; to the interference with proper and adequate ventilation of the tympanum from the Eustachian tube. Middle-ear disease may be caused by bacteria that gain entrance through the tonsils, which argues that the tonsil should be examined in middle-ear trouble. The tonsillar mass may interfere with the function of the Eustachian tube. In normal conditions this tube is patent, but not open. In deafness look for diseased tonsils and operate when they are found. Postnasal obstructions should be removed before orthodontia is attempted.

Necessity for Early Treatment of Strabismus

Dr. Fred Stauffer, Salt Lake City: It is only by early treatment that we can hope for cure in strabismus, and by cure is meant the restoration of binocular single vision. The principles involved in this paper deal chiefly with the comitant squint and do not apply to paralytic strabismus. To understand the causes of squint and its treatment it is imperative to understand the physiology and refraction of the normal eye. Donders, in his researches for the cause of squint, found that a large majority of patients with non-paralytic comitant convergent squint were hypermetropic. The squinting eye is often astigmatic, or has other defects that interfere with a clear image. While the majority of convergent squints are hypermetropic, there are many hypermetropic persons who exercise perfect binocular single vision. It remained for Claude Worth of London to fill the breach through his researches and critical study of over 2,000 cases of squint. He discovered the fusion sense of which there are several degrees of development. Convergent squints appear early in life—at the age when the child begins to pay close attention to surrounding objects, usually between the ages of one and three years. The object of treatment is to restore parallelism of the visual axes and restore binocular single vision. If one eye is permitted to squint for a considerable time it becomes amblyopic from disuse. In some cases the squint eye is congenitally amblyopic. If treatment is not commenced before the fifth or sixth year there is little hope of restoration of binocular vision. The rational thing to do is to paralyze accommodation temporarily with atropin, and after measuring the refractive error with the retinoscope, prescribe a lens for constant wear that will make the eye emmetropic. Thirty per cent. of convergent squints treated early by this method are curable. If this fails there is generally insufficient development of the fusion sense. The fusion sense can be trained by the use of some form of stereoscope, such as Worth's amblyoscope. A child who is old enough to develop a squint is old enough to wear correcting glasses. Early treatment cannot be too strongly urged, because it eliminates the necessity for operative interference, and because if treatment is long delayed it becomes impossible to restore binocular vision. Non-paralytic divergent squint comes on later in life and generally requires operation. When fusion training and correcting lenses fail, operative treatment is indicated. The age of 5 years is late enough for operative treatment, which allows ample time for other treatments. The point I desire to emphasize is the necessity for commencing treatment as soon as the child begins to squint.

Diagnostic and Therapeutic Value of the Roentgen Ray

Dr. C. F. Osgood, Ogden: Radiology to-day occupies a prominent place in medicine and surgery. The *x*-ray is not a panacea for all ailments, but is limited in its use. For diagnostic purposes it is often indispensable, especially in determining the existence of obscure fractures or dislocations, many of which are diagnosed as sprain. The use of the *x*-ray prevents such blunders. In the diagnosis of pleural effusions and enlargement of the heart, the fluoroscope gives valuable confirmatory evidence, as the exudate is quite resistant to the ray. The line of demarcation is more marked in purulent than in serous exudates. In the treatment of pathologic conditions it is an agent of proved efficiency. Of the diseases most successfully treated by the *x*-ray, mention may be made of epithelioma, lupus, chronic eczema, tuberculous adenitis, exophthalmic goiter, and leucemia. I have successfully treated with the ray three cases of epithelioma with no recurrences, two of chronic eczema, one very old case of lupus and one of leucemia. In lupus it is preferable to the Finsen light.

Etiology of Phlegmasia Alba Dolens

Dr. Eugene H. Smith, Ogden: This is a condition dependant on various causes and occurring as a complication or sequel to different diseases. It often indefinitely prolongs an otherwise rapid convalescence. It occurs most frequently following disturbances of circulation in the pelvis, but it also follows operative procedures in the upper abdomen. It occurs as a complication or sequel to appendicitis, yet it may develop when no operation has been undertaken. As to the frequency of its occurrence during the puerperium, statistics vary from 12 to 10,000, to 23 to 6,000. Operative intervention or other obstetrical procedures seem to play no part in its production, as it follows as frequently the clean case as the case in which trauma and infection were probable factors. Thrombosis not infrequently occurs in typhoid fever, pneumonia, tuberculosis and influenza. In its production in these conditions, debility, recumbency and infection must play a part. When the veins of the lower extremities are involved the left side is most frequently the seat of affection. Of predisposing causes, the anatomic arrangement of the iliac and femoral vessels seems to favor its occurrence. The left iliac vein is subject to pressure from distention of the sigmoid or rectum, thus favoring thrombosis of the left side by retarding the blood stream.

The venous stasis and dilated condition of the vessels in varicose veins is a local and predisposing cause, favoring the development of phlebitis and thrombosis. In other words, mechanical interference is a local predisposing factor. Hemorrhoids like varicose veins, with the added element of possible infection, share in the production of circulatory disturbances. Pathologic states of the interior of blood vessels cause the formation of thrombi, as endocardial inflammations, and lead to emboli, favoring the development of thrombosis. Of systemic conditions increased coagulability of the blood is a factor in the production of thrombosis. This is likely to occur during the puerperium because of the process of involution and the loss of blood, not to mention the normal increase of the fibrin elements in the blood which occurs in pregnancy. It would seem that the probabilities are strongly in favor of the non-infectious nature of operative cases. It is probable that a combination of several factors may bring about its occurrence without the participation of microorganisms. Trauma is probably the most active factor in the production of many cases.

MINNESOTA STATE MEDICAL ASSOCIATION

Forty-first Annual Meeting, held at Winona, Oct. 12-14, 1909

The President, Dr. Cornelius Williams, in the Chair

The officers elected were given in The Journal, Oct. 30, 1909, p. 1493.

President's Address: The Physician's Place in the Community

Dr. Cornelius Williams, St. Paul: The proper position of the medical man in the community is not fully appreciated, either by the physician himself or by the lay citizen. Long years of communal isolation have bred ideas that have become convictions on the part of the public. The physician is stamped, as it were, with a kind of bar sinister. By common consent, the doctor is relegated to the doing of certain prescribed duties and the bearing of certain burdens demanded and required because of the bar sinister—and gratis. The physician, because he is a physician, is required to give freely of his time and skill whenever and wherever needed without hint of compensation. As well would it be to require of the artisan that he should build hospitals, and the dealer that he should completely furnish them, as that a physician should give gratis of his time and labor and skill by which and through which alone their conduct is possible. My proposition is that the bar sinister should be broken, that the physician should receive full and usual compensation for his work, in fact, that he should come into his own. How shall this be brought about? It cannot be done by "educating the public," because one cannot educate a class by mere reasoning and argument to do a thing contrary to established custom. I mean that all gratuitous service on the part of the physician to the public shall cease. There is properly no mystery about medicine as a science or an art, and there is no reason why the whole people should not acquire a knowledge of the fundamental truths that underlie medicine as a science and of its practice as an art, and an understanding of such art and science will make the human animal physically and intellectually superior.

This elevation of the race must come through medicine, and this is the mission of the medical profession. There are very divergent views, as to where the initial work must fall. I declare that it is only by a participation in politics that the physician may accomplish his whole mission, and that such participation is one of his highest duties. From the very nature of his position his duties place him in the rôle of police; he must suppress or regulate whatever is injurious to the peace, health, morality, general intelligence and thrift of the community and its internal safety. Isolated in the sense that there is no concert of action, the medical man is a negligible quantity, as to any influence, either for good or bad legislation, but, united into a guild of workers, the medical body would be a great power to determine the outcome of an election and to direct the measures of government.

I then propose the formation of a medical guild to comprehend every medical man in the state. The object shall be to become the highest political power in the highest sense of the word. In my opinion, the foundation of a medical guild, together with another insurance guild, would be an ideal method for the closer alliance of the medical profession for mutual protection against an enemy in any form.

In most instances in our state the judiciary is of the highest order, but there are certain rules of practice that are obsolete and injurious, particularly as pertaining to the trial of cases involving the practice of medicine and surgery. Even the judicial mind may seem to be warped by what is technically known as passion and prejudice. The medical guild would seem to be the only effective way of eliminating men of such minds and methods.

The medical guild then, if I may be permitted the expression, might be called a communal deobstruent, whose office would be to purge society of some of its evils, and to modify some of the evils of intestinal malassimilation of the body politic, to raise the opsonic index of that body, and to afford the proper and measured antitoxin required to correct a morbid condition induced by insanitary ways of living. I would expect that the propositions contained in this paper will meet the treatment usually accorded to the pioneer who breaks out of the beaten path, but I am convinced that the things suggested are practical of doing, and that their doing would be of exceeding benefit to the community, and would inaugurate a new era in medicine.

SYMPOSIUM: EPIDEMIC ANTERIOR POLIOMYELITIS

Previous Epidemics of Anterior Poliomyelitis

Dr. Haldor Sneve, St. Paul: Over fifty epidemics of this disease have been recorded. Medin, of Stockholm, gave the first account. Later his pupil, Wickman, also of Stockholm, made the most careful study ever made of any epidemic disease, and showed that the disease is an acute infection, contagious, and may assume clinically one of numerous forms of disease heretofore regarded as distinct, such as the cerebral infantile palsy (of Strümpell), the ophthalmoplegia of Wernicke, the bulbar palsy of Duchenne, Landry's paralysis, transverse myelitis, and abortive forms. Giersvold, of Norway, has given us the same facts. We needed the masterly pathologico-anatomic studies of Harbitz and Scheel, of Norway, to give a correct insight of the nature of the disease process. They showed it to be a specific leptomeningitis, the virus starting from the pia as a base, following the blood-vessels into the whole of the cerebrospinal tract, destroying or temporarily affecting the ganglion cells, especially where the blood supply is the most rich. Geirsvold gave the only positive evidence of the nature of the virus. He found a diplococcus in the spinal fluid in twelve cases, and inoculated animals with the germ, producing paralysis and death. For the present we must accept the diplococcus described by him as the active causative agent. Entry is probably through the nose and throat.

Four-fifths of the cases occur in children under 6 years of age, the proportion of males to females being 3 to 2. Epidemics seem to follow rivers and appear mainly in the months of July, August and September. The period of incubation is from one to five days. The onset is usually sudden with meningeal symptoms, and fever in the neighborhood of 101 F. Healthy children are as liable to be attacked as the weak. The mortality is about 10 per cent. in children and 25 per cent. in adults. About four-fifths of the patients have paralysis, and 25 per cent. of these completely recover; 75 per cent. of the remainder recover partially. Abortive cases present the greatest difficulty in diagnosis as they may appear to be cases of influenza, meningitis or of polyneuritis, and we can only suspect them when occurring in the presence of an epidemic. A study in the Rockefeller Institute seems to indicate that diagnosis of this disease by a serum reaction is impossible. Lumbar puncture may reveal the Geirsvold microbe besides being a valuable therapeutic measure.

The first thing in treatment is rest; hexamethylenamin may be given in the acute stage. Antiseptic gargles and nose washes may have prophylactic value; 1/10 grain of calomel every hour, with salicylates, may be given when indicated. Dry cupping or ice bags or counter irritation may be used over the spine. The paralyzed limbs should be supported; later strychnin may be given; in about two weeks massage, vibrations, electricity, and elastic bands or orthopedic appliances should be employed. This is not a new disease, but is even mentioned in the Bible. That Mephibosheth became lame was ascribed to carelessness of the nurse in letting him fall. Sporadic cases are with us always and occasionally an exacerbation occurs which we call epidemics.

Minnesota Outbreaks of Anterior Poliomyelitis in 1908

Dr. A. S. Hamilton, Minneapolis: Three epidemics of anterior poliomyelitis, all more or less extensive, appeared in Minnesota in 1908. At Hibbing, 16 cases were reported; at Northfield, 30; and at Barnum and Moose Lake, 45 cases. In addition there were numerous isolated cases of the disease scattered widely through the state, and in a few localities, in addition to the above, the number of cases was sufficient to constitute a limited epidemic. All epidemics came in the autumn and the cases disappeared after the onset of cold weather. Together there were probably 150 or more cases in the state; 13 deaths were reported to the State Board of Health as due to poliomyelitis. Clinically the cases were much the same as have been observed this year and also in preceding epidemics. At Barnum, however, the number of instances where more than one case occurred in the same family was very much greater than usually reported.

Discussion on Poliomyelitis

Dr. Donald B. Pritchard, Winona: Anterior poliomyelitis was epidemic in Winona during the past season, the first case occurring in June and the last in August. The cases were reported to Dr. Bracken who sent down Dr. Hill, and instead of 6 or 7 it was found that there were about 25 cases. Dr. Hill went into the history thoroughly and found the cases occurred in the dry and dusty season. The distribution was over a distance 2½ miles long by 1¼ miles wide. There seemed to be no connection between the cases; families in which there were from 6 to 10 young children having only one case. In one family with 2 children both had it. The cases seemed to occur in the part of the city that was not sprinkled, and we even found cases where only one side of the street was sprinkled on the unsprinkled side. It was remarkable to see how that basis held out. In view of this fact we had the streets sprinkled, beginning on the fifth of the month and on the twelfth we had the last case.

Dr. E. D. Keyes, Winona: I saw about 6 cases during July, and one patient who came in about a month ago from the country. This last was a case of ascending paralysis in a girl 17 years old. The cases with one exception were isolated cases, the exception being in a family of 12 children in which 2 had the disease. The cases were scattered over the whole city and there seemed to be no connection between one case and another. It was an epidemic condition rather than contagious disease. The general behavior of the disease seemed to indicate that dust played some part in carrying the infection.

Dr. F. W. Bullen, Hibbing: During the summer of 1908 there were 15 cases of acute anterior poliomyelitis in Hibbing and vicinity, the first 2 cases occurring June 15 and July 4, and the balance during the last week in July and the first week in August. The weather was dry and dusty. In only 2 instances did 2 cases occur in the same family. Ten of the families traded at one grocery store and 2 children of members of the firm had the disease. One case was that of a young man of 24, one boy of 6, the other patients being 1 and 3 years of age; 5 were females and 10 males. The initial symptoms were those of acute gastroenteritis. Vomiting was an early symptom and diarrhea was present in nearly all cases. Temperature ranged from 101 to 104 F., continuing from 3 to 6 days. Sore throat occurred only once. Kernig's sign was present only once. Paralysis appeared on the third to the seventh day, of the flaccid type, and the paralyzed extremity was usually painful on motion only. There was only one fatal case, death being due to paralysis of respiration. No autopsy was permitted. This was thought to be a case of acute polioencephalitis complicating a poliomyelitis, but may have been an infantile hemiplegia. Another patient showed convergent strabismus on the fifth day with no other paralysis. This patient completely recovered in 9 months. The case of the young man of 24 somewhat resembled Landry's paralysis. He also had urinary retention for several days. The rest of the cases were of the ordinary spinal type; 2 were of the abortive type with complete recovery in less than 3 months. Of the 15 patients one died, 6 have completely recovered, one has been lost sight of, and 7 still show more or less atrophy and paralysis. There has been only one case this summer, a boy of 2½ years, with paralysis of the lower extremity only.

Dr. H. W. Hill, Minneapolis (Minnesota State Board of Health): There were at least 150 cases of anterior poliomyelitis in the state last year. The distribution of the cases was very wide. The number given represents perhaps only one-fourth of all the cases, since many cases were not recognized and many were not reported. We do not know how many cases we had, but those of the abortive type were legion. This year the cases were much better reported. I was in one locality where fifty cases had been reported, and I was able to satisfy myself that one out of four was probably poliomyelitis. An interesting feature is the two types of disease. One which we call the Scandinavian type is accompanied by sore throat, but in the type we have here in Minnesota the sore throat is not present. In regard to nationality, in Winona we found that a great many Poles had the disease, while in other localities we found the prevalent type existing in families living under insanitary conditions and with poor nutrition. We have not been able to find any evidence that the disease is infectious or contagious. While a few older people were attacked, it may safely be said that the disease is confined to children. In studying it epidemically we have gone into everything we could think of. We went into the question of eating dirt, and of eating vegetables raw out of the garden. We could not find through the state entomologist that any particular insect was more prevalent than in former years; we found weeds very abundant, but in following up that lead it came to a blind end. We were unable to find anything in that way except the dust. We found in all cases where the dust had been the greatest it was of the character that carried horse manure. Another interesting feature is that Dr. C. S. Shore, of Lake City, a veterinary surgeon, reports a disease among colts and young horses almost identical with anterior poliomyelitis.

Dr. H. E. Robertson, University of Minnesota: I performed three autopsies this fall on undoubted cases of poliomyelitis:

Case 1 was that of a boy 2½ years old. He was ill 8 days. After the usual febrile disturbance there was paralysis of both arms and legs, on the right side first, and finally of the bulbar centers. Autopsy was limited to spinal cord. On opening the dura, marked excess of clear cerebrospinal fluid escaped. On section of cord, in upper portion of cervical enlargement was a pin-head-sized hemorrhagic area located in the right anterior horn of the gray matter. The area was soft and bulged on gentle pressure. It extended up and down the cord for a distance of about 5 mm. Cultures from the cerebrospinal fluid showed the presence of a Gram-positive diplococcus, non-pathogenic to guinea-pigs or rabbits.

Case 2 was that of a boy of 9, ill about 60 hours. Complete autopsy was performed and examination of organs was negative except for swelling of lymphoid tissue noted in spleen, lymph nodes, thymus and follicles of intestines. Brain and cord surfaces were deeply congested and clear cerebrospinal fluid was present in excess. Transverse section of cord showed small hemorrhagic foci in the gray matter of the anterior horns, the highest in the right side of the medulla, varying in location from side to side as far down as lower thoracic portion. Cultures from the cerebrospinal fluid gave a Gram-positive diplococcus.

Case 3 was that of a girl aged 3, ill 14 days with paralysis of arms and legs and death from respiratory failure. Aside from congestion and softening of spleen and congestion of pia-arachnoid, the gross lesions were confined to the pons and cord. Hemorrhages were present in the anterior horns as far up as the peduncles of the cerebrum. Only the lower thoracic cord was free from hemorrhages. Cultures from this case were made by Dr. Chesley of the State Board of Health. A

Gram-positive diplococcus was obtained from spleen, heart's blood, lateral ventricle of the brain, cerebrospinal fluid, throat and middle ear. This organism resembles in morphology and cultural characters the coccus described by Giersvold and also by Fox.

Microscopically the lesions in every case have resembled each other: (1) Congestion of vessels, especially those leading to anterior horns. (2) Perivascular infiltration of polymorphonuclear and mononuclear cells, the latter being both lymphoid and endothelioid in type. (3) Infiltration of pia and nerves running from anterior horns. (4) Necrosis of gray matter of anterior horns, especially the ganglion cells, with diffuse infiltration of polymorphonuclear and mononuclear cells. (5) Hemorrhages into gray matter of anterior horns. (6) Thrombosis of vessels in region of hemorrhages (seen only in Case 3). (7) Dilated lymph channels. (8) Occasional infiltration along lines of vessels extending into base of brain and also posterior horns of cord.

Dr. A. J. Chesley, Minneapolis: The Minnesota State Board of Health laboratory has received for examination specimens from 24 cases of poliomyelitis. Spinal fluids were sent in from 16 cases, but 5 showing no growth and 4 being badly contaminated, only 7 were suitable for investigation. From 6 a Gram-positive diplococcus, corresponding in every detail to the description of Giersvold's diplococcus given by Fox, was obtained in pure culture and further experimentation is now in progress. Hearty cooperation of physicians is urged in obtaining nose and throat cultures, spinal fluid, blood, etc., for examination from every case, and in securing permission for post-mortem examinations to be done by competent pathologists as soon after death as possible, that every facility may be had in the effort to determine the cause of this disease, and a specific remedy for its treatment or prevention.

Dr. W. A. Jones, Minneapolis: Eight years ago I saw about 12 cases of general paralysis which agreed closely with the epidemic of the present time. I called them simple neuritis. I believe, as has been suggested, that we are laboring under a misnomer in designating all these cases as anterior poliomyelitis, but, on the other hand, I do not agree with the suggestion that we ought to call everything of this nature anterior poliomyelitis.

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES

Eighteenth Annual Meeting, held in Washington, D. C., Oct. 5-8, 1909
(Continued from page 1683)

The Venereal Peril

Lieut.-Col. Henry I. Raymond, U. S. A., based his paper on "The Eradication of Specific Urethritis from the Army by means of the 'K' package. Reenforced by Military Law and Discipline," on the following postulates:

Specific urethritis is the cause of more non-effectiveness in the army than any other one disease, the venereal diseases alone being responsible for a non-effectiveness equal to the loss of the services of an entire regiment for every day in the year, as shown by Col. John V. R. Hoff, U. S. Army, in his paper on "The Venereal Peril" (read by title).

Soldiers will expose themselves to venereal infection as long as human nature remains unsanctified. Moral suasion alone is inadequate to effect the desired revolution.

To effect escape from the physical ills of a sinful practice is a legitimate end of sanitary endeavor. It is not encouraging vice. The young man who avoids promiscuous intercourse from principle will not be misled through proffered immunity from infection.

A rational method of prophylaxis or prevention of specific urethritis has been devised, its general adoption in the army requiring the enactment and enforcement of a new military regulation making the contraction of gonorrhea a military offense.

There were issued to 576 individual enlisted men out of a garrison of 1,800 who applied for them at Fort Sam Houston, Texas, "K" packages. Of this 576, all of whom supposedly exposed themselves to the possibility of infection, in no case in which the remedy was intelligently applied, did it fail in efficacy. That portion of the garrison which did not make use of the package presented 66 cases of gonorrhea.

Those who did not use the "K" package and who contracted gonorrhea were wilful and neglectful, those who used the package and contracted gonorrhea were indifferent and careless; both classes were proper subjects for military discipline.

When there was no rational method of preventing the disease the contracting of gonorrhea was properly considered not a military offense, but now it may be viewed from a different standpoint.

So strong is the evidence that the "K" package, intelligently applied, will prevent infection, that no exemption should be made, but the unfortunate victim who may claim to have made use of the preventive should be held to have been negligent in its application if not untruthful in his allegation.

Weekly inspections should be made for venereal disease, and any attempt at concealment should be regarded as an aggravating circumstance before the summary court.

The weakest link in the chain of prevention of venereal disease in the army is the lack of a feeling of personal accountability on the part of the enlisted man, fostered by a sense of security from punishment for physical disablement through his own misconduct or through his indifference to rational preventive measures intended to secure his immunity from the ill consequences of his immoral acts.

Disease and Battle Casualty

Major Louis Livingston Seaman, U. S. V., stated that in most of the great wars of history three-fourths of the mortality has resulted from disease and only one-fourth from battle casualty. Most of this loss is preventable and constitutes a crime against humanity and patriotism. Service in six campaigns has convinced Major Seaman of the utter inadequacy of the medical departments of nations, with one notable exception. When it is remembered that this department combats the enemy that kills 80 out of every 100 that die in war, and that all the other machinery of the army kills but 20 per cent., and also that the medical department with its small numbers and limited authority, has to fight the invalidism that sometimes renders an army ineffective before the enemy, one is forced to the conclusion that the situation demands medical reform.

In order to focus the attention of military sanitarians on this subject, Major Seaman has offered a prize of $500, open to the world, in any language, for the best essay on the following subject: "What Should Be the Organization and Status of the Medical Department of Any Army, in Order that its Sanitary and Hygienic Conditions May be Maintained at their Highest Efficiency, so that in the Emergency of Battle, its Units May Best Respond to the Call of its Commanders?" The award of this prize will be made by the Executive Committee of the Seventeenth International Medical Congress, which meets in London, in 1912.

Care of Wounded in Ships

Medical Inspector Bunzo Tomatsuri, Imperial Japanese Army, believed that all surgical interference should be aseptic. Space should be provided in ships of war for original surgery, with possibility of uninterrupted communication by means of elevators and ladders. The greatest care should be taken of the wounded after first aid has been rendered. The provision for transportation and subsistence of the wounded still leaves much to be desired. He recommended the use of sandbag splints for immobilization.

Organization of Naval Medical Department

Medical Inspector Lloyd W. Curtis, U. S. N., discussed the organization of the medical department and the sanitary service of the fleet under present conditions, and described the organization which in his opinion would best meet the requirements of the fleet in view of further expansion, and render the most efficient service both in peace and war. He gave an outline of the duties of medical officers, the medical personnel of the fleet and their duties, the relations of the medical department to line officers. The office of fleet surgeon at present answers no particular purpose.

Best Training for Medical Officers

Surgeon Charles F. Stokes, U. S. N., who considered the question of what should constitute the best training for medical officers, the hospital corps and the ambulance parties of the fleet for sanitary service and as aid to the wounded in time of peace and war, insisted on previous service in civil hospitals and a rigid and exacting examination. He finally believed in the unification of action through the medium of postgraduate instruction in the Naval Medical School. The keynote of instruction in the school should be the cultivation of the senses, and independence of the laboratory and the *x*-ray. The association of naval medical officers with civil practitioners is inspiring. The hospital corps should be intelligent men. The advent of female nurses has made a great change and a signal advance in naval hospital conditions. Medical officers should instruct line officers in first aid work, and the line officers in their turn should instruct the men.

Medical Director John C. Wise, U. S. N., believed in the value of the great metropolitan schools for medical study. Deficiency in preliminary education is the greatest evil in the medical profession to-day. He deprecated the amount of time spent in the laboratory, as graver questions than those of bacteriology are not given so much attention as they deserve.

Medical Inspector Henry G. Beyer, U. S. N., gave his opinions as to the best training for medical officers intended for the positions of fleet and squadron surgeons, and of the principles which should determine their selection for the postion, and also took up the duties and responsibilities of fleet and squadron in relation to fleet sanitary efficiency.

Medical Department of Ship in Action

Medical Director John C. Wise, U. S. N., detailed the most important constituents in principle, and practice of the efficient organization of the medical department of a ship during action, including provisions for, and methods of, rendering first aid to the wounded, and described a scheme for uniform instruction in first aid to sick and wounded. There is a vast difference between the service to the wounded at sea and on land. At sea the horizontal planes are different, the means of communication between levels or decks are vertical, and in addition, every inch of space on a ship is on the firing line. The Geneva flag protects only the hospital ships. The ship's company should be instructed in first-aid methods. The medical department during action should be stationed at sheltered points, and the hospital corps men at places where they can be most useful. Dressings should be provided in plentiful store, freely distributed and never kept en màsse. The transportation should be governed by circumstances.

Hospital Ships

Surgeon George Pickrell, U. S. N., to whom was assigned the topic of the precise functions of the hospital ship and its relation to the fleet in peace and war, urged the necessity of hospital ships in time of peace. He recalled one instance when 22 patients on one battleship needed transfer. A floating hospital should be attached to each squadron.

Surgeon Charles F. Stokes, U. S. N., considered the factors that make the hospital ship an aid to the efficiency of the fleet; emphasized the importance of one in the selection of the personnel, the type of ship and its equipment; the necessity for an extensive disinfecting plant; the imperative necessity of isolation wards; the early recognition of tuberculosis and the importance to the welfare of the fleet, of proper provisions for prolonged treatment of the disease; and the necessity for extensive laboratory facilities. The hospital ship should be the medical store ship of the fleet, and the fleet surgeon and other medical officers should keep in close touch with the hospital ship. He suggested the advisability of the organization of a medical society in the fleet, with the headquarters on the hospital ship. Junior medical officers should be detailed to serve for short periods on the hospital ship. He then discussed the final disposition of the sick, neutrality, the preparations for battle, the station of the hospital ship during battle, the importance of accurate and complete records and the final disposition of the wounded.

(*To be continued*)

MISSISSIPPI VALLEY MEDICAL ASSOCIATION

Thirty-fifth Annual Meeting, held at St. Louis, Oct. 12-14, 1909

(Concluded from page 1677)

Stricture of the Male Urethra

Dr. E. O. Smith, Cincinnati: Stricture of the urethra is an abnormal narrowing of some part of that channel which interferes with the free outflow of urine, due either to muscular spasm or to organic changes in the walls of the urethra. Abnormal narrowing of the external meatus should be divided very carefully. If cut too widely the patient will be left without projectile force. Spasmodic contraction of the urethra is usually due to acid urine, sexual excesses, fissure of anus, hemorrhoids, pin worms, cantharides, turpentine, etc. Strictures following traumatisms are much more stubborn to treatment and the band of scar tissue may have to be dissected out through an external incision. The popular idea that a rapid cure of gonorrhea causes stricture is not based on facts, but, on the contrary, the longer the duration of the gonorrheal inflammation the more liable is the patient to have a stricture. In fact, it is the exception for a urethra to become absolutely normal after one prolonged attack of specific urethritis. The urethra behind the constricting band becomes dilated, a pouch is formed which is a most excellent container and incubator for the germs of sepsis, which may lead to periurethral abscess and possibly urethral fistula. All this argues for an early treatment of stricture. Stricture is suspected when there is gleet, frequent micturition with a tardy beginning of the stream, dribbling after urination, with possibly some hypogastric pain. In examining for stricture great care and gentleness must be practiced, otherwise a false passage may be produced. Treatment is both general and local, and diet bland and not stimulating. Alcohol and tobacco are to be excluded, and sexual excesses avoided, and also exposure to cold and wet. Local treatment is that of gradual dilatation. Begin with the largest sound or bougie that can be easily passed; this may be only a filiform. The size of the sounds used is gradually increased. Treatments should be every four or five days in the beginning, with careful attention to surgical cleanliness. Urethral chill and shock can usually be prevented by giving the patient 10 grains of quinin and 5 drops of tincture of aconite about 20 minutes before the treatment. Epididymitis may, but seldom does, follow the passage of a sound. Strictures that do not yield to the gradual dilatation treatment are the exception. Internal urethrotomy should not be attempted except by those skilled in genitourinary surgery, as there is a possibility of doing great damage. External urethrotomy is seldom necessary in the treatment of stricture, other than those due to traumatism.

Burns

Dr. A. H. Barkley, Lexington, Ky.: Burns are the most frequent injury in civil life, cause the most agonizing suffering, and frequently condemn the patient to life-long mutilation of the most repulsive character. The severity of a burn depends on the character and degree of the heat, the length of time it is applied and the thickness of the cutaneous surface. A man, aged 56, an engineer, was burned by hot water and steam. He is 5 feet 10 inches and weighed 160 pounds at the time he was injured. He has nineteen square feet of skin on his body. Of this ten square feet were burned off, in four square feet the burn was of the third degree. Recovery was complete. The interesting points in the case are the area of skin burned, absence of contractures, no complications and healing without skin-grafting.

Treatment of Some Forms of Neuralgia by Deep Injections

Dr. D'Orsay Hecht, Chicago: My first patient was injected Nov. 20, 1906, and my last Sept. 30, 1909. During the period between these dates I have injected forty-eight patients with tic douloureux; eight besides this number were rejected because they were unsuited for this treatment. In all cases the diagnosis was made on the strength of the short, sharp paroxysms of pain so characteristic of the condition, and after careful inquiry into all conditions of the teeth, jaws, mouth, Gram-positive diplococcus was obtained from spleen, heart's blood, lateral ventricle of the brain, cerebrospinal fluid, throat and middle ear. This organism resembles in morphology and cultural characters the coccus described by Giersvold and also by Fox.

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The weakest link in the chain of prevention of venereal disease in the army is the lack of a feeling of personal accountability on the part of the enlisted man, fostered by a sense of security from punishment for physical disablement through his own misconduct or through his indifference to rational preventive measures intended to secure his immunity from the ill consequences of his immoral acts.

Disease and Battle Casualty

Major Louis Livingston Seaman, U. S. V., stated that in most of the great wars of history three-fourths of the mortality has resulted from disease and only one-fourth from battle casualty. Most of this loss is preventable and constitutes a crime against humanity and patriotism. Service in six campaigns has convinced Major Seaman of the utter inadequacy of the medical departments of nations, with one notable exception. When it is remembered that this department combats the enemy that kills 80 out of every 100 that die in war, and that all the other machinery of the army kills but 20 per cent., and also that the medical department with its small numbers and limited authority, has to fight the invalidism that sometimes renders an army ineffective before the enemy, one is forced to the conclusion that the situation demands medical reform.

In order to focus the attention of military sanitarians on this subject, Major Seaman has offered a prize of $500, open to the world, in any language, for the best essay on the following subject: "What Should Be the Organization and Status of the Medical Department of Any Army, in Order that its Sanitary and Hygienic Conditions May be Maintained at their Highest Efficiency, so that in the Emergency of Battle, its Units May Best Respond to the Call of its Commanders?" The award of this prize will be made by the Executive Committee of the Seventeenth International Medical Congress, which meets in London, in 1912.

Care of Wounded in Ships

Medical Inspector Bunzo Tomatsuri, Imperial Japanese Army, believed that all surgical interference should be aseptic. Space should be provided in ships of war for original surgery, with possibility of uninterrupted communication by means of elevators and ladders. The greatest care should be taken of the wounded after first aid has been rendered. The provision for transportation and subsistence of the wounded still leaves much to be desired. He recommended the use of sandbag splints for immobilization.

Organization of Naval Medical Department

Medical Inspector Lloyd W. Curtis, U. S. N., discussed the organization of the medical department and the sanitary service of the fleet under present conditions, and described the organization which in his opinion would best meet the requirements of the fleet in view of further expansion, and render the most efficient service both in peace and war. He gave an outline of the duties of medical officers, the medical personnel of the fleet and their duties, the relations of the medical department to line officers. The office of fleet surgeon at present answers no particular purpose.

Best Training for Medical Officers

SURGEON CHARLES F. STOKES, U. S. N., who considered the question of what should constitute the best training for medical officers, the hospital corps and the ambulance parties of the fleet for sanitary service and as aid to the wounded in time of peace and war, insisted on previous service in civil hospitals and a rigid and exacting examination. He finally believed in the unification of action through the medium of postgraduate instruction in the Naval Medical School. The keynote of instruction in the school should be the cultivation of the senses, and independence of the laboratory and the *x*-ray. The association of naval medical officers with civil practitioners is inspiring. The hospital corps should be intelligent men. The advent of female nurses has made a great change and a signal advance in naval hospital conditions. Medical officers should instruct line officers in first aid work, and the line officers in their turn should instruct the men.

MEDICAL DIRECTOR JOHN C. WISE, U. S. N., believed in the value of the great metropolitan schools for medical study. Deficiency in preliminary education is the greatest evil in the medical profession to-day. He deprecated the amount of time spent in the laboratory, as graver questions than those of bacteriology are not given so much attention as they deserve.

MEDICAL INSPECTOR HENRY G. BEYER, U. S. N., gave his opinions as to the best training for medical officers intended for the positions of fleet and squadron surgeons, and of the principles which should determine their selection for the postion, and also took up the duties and responsibilities of fleet and squadron in relation to fleet sanitary efficiency.

Medical Department of Ship in Action

MEDICAL DIRECTOR JOHN C. WISE, U. S. N., detailed the most important constituents in principle, and practice of the efficient organization of the medical department of a ship during action, including provisions for, and methods of, rendering first aid to the wounded, and described a scheme for uniform instruction in first aid to sick and wounded. There is a vast difference between the service to the wounded at sea and on land. At sea the horizontal planes are different, the means of communication between levels or decks are vertical, and in addition, every inch of space on a ship is on the firing line. The Geneva flag protects only the hospital ships. The ship's company should be instructed in first-aid methods. The medical department during action should be stationed at sheltered points, and the hospital corps men at places where they can be most useful. Dressings should be provided in plentiful store, freely distributed and never kept en masse. The transportation should be governed by circumstances.

Hospital Ships

SURGEON GEORGE PICKRELL, U. S. N., to whom was assigned the topic of the precise functions of the hospital ship and its relation to the fleet in peace and war, urged the necessity of hospital ships in time of peace. He recalled one instance when 22 patients on one battleship needed transfer. A floating hospital should be attached to each squadron.

SURGEON CHARLES F. STOKES, U. S. N., considered the factors that make the hospital ship an aid to the efficiency of the fleet; emphasized the importance of one in the selection of the personnel, the type of ship and its equipment; the necessity for an extensive disinfecting plant; the imperative necessity of isolation wards; the early recognition of tuberculosis and the importance to the welfare of the fleet, of proper provisions for prolonged treatment of the disease; and the necessity for extensive laboratory facilities. The hospital ship should be the medical store ship of the fleet, and the fleet surgeon and other medical officers should keep in close touch with the hospital ship. He suggested the advisability of the organization of a medical society in the fleet, with the headquarters on the hospital ship. Junior medical officers should be detailed to serve for short periods on the hospital ship. He then discussed the final disposition of the sick, neutrality, the preparations for battle, the station of the hospital ship during battle, the importance of accurate and complete records and the final disposition of the wounded.

(*To be continued*)

MISSISSIPPI VALLEY MEDICAL ASSOCIATION

Thirty-fifth Annual Meeting, held at St. Louis, Oct. 12-14, 1909

(Concluded from page 1677)

Stricture of the Male Urethra

DR. E. O. SMITH, Cincinnati: Stricture of the urethra is an abnormal narrowing of some part of that channel which interferes with the free outflow of urine, due either to muscular spasm or to organic changes in the walls of the urethra. Abnormal narrowing of the external meatus should be divided very carefully. If cut too widely the patient will be left without projectile force. Spasmodic contraction of the urethra is usually due to acid urine, sexual excesses, fissure of anus, hemorrhoids, pin worms, cantharides, turpentine, etc. Strictures following traumatisms are much more stubborn to treatment and the band of scar tissue may have to be dissected out through an external incision. The popular idea that a rapid cure of gonorrhea causes stricture is not based on facts, but, on the contrary, the longer the duration of the gonorrheal inflammation the more liable is the patient to have a stricture. In fact, it is the exception for a urethra to become absolutely normal after one prolonged attack of specific urethritis. The urethra behind the constricting band becomes dilated, a pouch is formed which is a most excellent container and incubator for the germs of sepsis, which may lead to periurethral abscess and possibly urethral fistula. All this argues for an early treatment of stricture. Stricture is suspected when there is gleet, frequent micturition with a tardy beginning of the stream, dribbling after urination, with possibly some hypogastric pain. In examining for stricture great care and gentleness must be practiced, otherwise a false passage may be produced. Treatment is both general and local, and diet bland and not stimulating. Alcohol and tobacco are to be excluded, and sexual excesses avoided, and also exposure to cold and wet. Local treatment is that of gradual dilatation. Begin with the largest sound or bougie that can be easily passed; this may be only a filiform. The size of the sounds used is gradually increased. Treatments should be every four or five days in the beginning, with careful attention to surgical cleanliness. Urethral chill and shock can usually be prevented by giving the patient 10 grains of quinin and 5 drops of tincture of aconite about 20 minutes before the treatment. Epididymitis may, but seldom does, follow the passage of a sound. Strictures that do not yield to the gradual dilatation treatment are the exception. Internal urethrotomy should not be attempted except by those skilled in genitourinary surgery, as there is a possibility of doing great damage. External urethrotomy is seldom necessary in the treatment of stricture, other than those due to traumatism.

Burns

DR. A. H. BARKLEY, Lexington, Ky.: Burns are the most frequent injury in civil life, cause the most agonizing suffering, and frequently condemn the patient to life-long mutilation of the most repulsive character. The severity of a burn depends on the character and degree of the heat, the length of time it is applied and the thickness of the cutaneous surface. A man, aged 56, an engineer, was burned by hot water and steam. He is 5 feet 10 inches and weighed 160 pounds at the time he was injured. He has nineteen square feet of skin on his body. Of this ten square feet were burned off, in four square feet the burn was of the third degree. Recovery was complete. The interesting points in the case are the area of skin burned, absence of contractures, no complications and healing without skin-grafting.

Treatment of Some Forms of Neuralgia by Deep Injections

DR. D'ORSAY HECHT, Chicago: My first patient was injected Nov. 20, 1906, and my last Sept. 30, 1909. During the period between these dates I have injected forty-eight patients with *tic douloureux*; eight besides this number were rejected because they were unsuited for this treatment. In all cases the diagnosis was made on the strength of the short, sharp paroxysms of pain so characteristic of the condition, and after careful inquiry into all conditions of the teeth, jaws, mouth, nose, and accessory nasal sinuses, which sources are frequently responsible for pain which may quite closely simulate the disease. One must be mindful of the fact that tumors involving the fifth nerve, as well as syphilis and migraine, can give rise to pains that may simulate trifacial neuralgia. In many of the cases external skiagraphs were taken, and when these were felt to be unsatisfactory or unreliable, intrabuccal film skiagraphs were supplemented for the purpose of eliciting better detail, thereby affording a better means of localizing possible dental or oral sources of irritation. Among the rejected cases were those in which pain was caused by the presence of abnormal dental conditions, post-influenzal nasopharyngeal infections, sinus disease and hysteroid conditions. In point of therapeutic results, 32 patients were distinctly benefited, 8 were improved, 5 were unimproved, and 3 were aggravated. Of the 32 benefited, 1 patient was free for 1 year and 8 months. The shortest free interval has been 2 weeks. Recurrences have varied, in the successful cases on an average of 1 year. Some have returned for reinjection on the first reappearance of pain in 4 months, some 6, some 10 months, some 1 year, some 16 and 18 months. The variability is accounted for by the personal equation and the accuracy with which the alcohol was deposited in, at or near the nerve. In the entire series the patients required from 1 to 5 injections, this number sufficing for a permanent cure in the non-symptomatic neuralgia. An 8 per cent. salt solution of body heat injected in the amount of from 90 to 120 c.c. has seemed to act to better advantage than lesser amounts of different temperature.

What Women Should Know in Regard to Uterine Cancer

Dr. J. Henry Carstens, Detroit: I have suggested that the medical profession agitate this subject in the lay press and on every occasion talk cancer. The physician should talk about it in order to arouse the public as to its importance, because it is a great menace. I have suggested to the members of the Michigan State Board of Health that they get up a circular which should be in the hands of every woman in the cancer period of life. This circular should be in the possession of county societies and of every physician and should be given to every woman in the cancer age. The menopause comes on gradually, rarely suddenly. It is not preceded by excessive flowing, or discharge, or pain in a healthy woman. By the cancer period is understood those years after forty, although rarely it may occur earlier. The first symptoms of cancer are: 1. Profuse flowing, even if only a day more than usual. Flowing or spotting during intervals or after the use of a syringe or the movement of the bowels. 2. Leucorrhea, if not existing previously. If existing, but becoming more profuse, watery, irritating or producing itching, it is a very suspicious symptom. 3. Loss of weight if no other cause is apparent. Pain in the region of the uterus, back or side. If any of the above symptoms occur after the age of forty or thirty-five a woman should seek prompt relief and insist on a thorough investigation of the cause and prompt treatment. Cancer is always at first a local disease and can be removed if early recognized, and an absolute permanent cure brought about.

Problem of the Insane and the Defective

Dr. L. M. Crafts, Minneapolis, read a paper on this subject which embodied a consideration of past methods of care or neglect of these conditions by society, the present lines of care and nurturing of them, enabling their more frequent and prolonged survival and activity, including procreation. He also took up the conditions in the present social state tending to greater strain on the nervous system, with the increasing lines of neuropathic heredity thus engendered. His paper dealt with the various state and national statistics bearing on the question and pointed out the present absolute lack of regulation or control of the free activity of these classes, in producing a posterity. He offered suggestions for advisable legislation for effective control of such individuals.

Reflex Neuroses Arising from Nasal Abnormalities

Dr. J. A. Stucky, Lexington, Ky.: Six salient points, as given by Ziegler, should be borne in mind when searching for reflex neuroses, and to these I would add a seventh: 1. Eye and nose must first of all be thoroughly examined and excluded or accepted as exciting cause. 2. Careful differentiation should be made of those reflexes manifested in common by the eye and nose. 3. Eyestrain from whatever cause, whether ametropia, subnormal accommodation or intranasal pressure, should be corrected to exclude the eye as a factor. 4. Pressure contact in the nose in every instance must be relieved. 5. Every obstruction to free breathing in the superior part of the nose should be removed. 6. Recurrence of any reflex neurosis demands reexamination, renewed search for and correction of original exciting cause. 7. Lithemic conditions, faulty intestinal metabolism of whatever type, must be corrected and deserve careful consideration in every reflex neurosis whatever be the exciting cause.

Acute Dilatation of the Stomach

Dr. Edwin Walker, Evansville: The treatment of acute dilatation of the stomach consists of prompt evacuation of the stomach by the stomach tube, followed by copious lavage. It would be an excellent practice in all postoperative cases in which vomiting is prominent to resort to this measure. In order to release the pressure on the duodenum the patient should lie on the abdomen, with the foot of the bed elevated or, in extreme cases, in a knee-chest position. It is astonishing in grave cases to see the prompt relief given by these measures. The lavage should be repeated when the fluid reaccumulates or if the condition of the patient does not improve. Strychnin and physostigmin have been given. Rectal feeding should be given.

Muscle Rigidity: An Important Physical Sign of Disease Within the Chest

Dr. F. M. Pottenger, Monrovia, Cal.: Muscle rigidity is a feeling of resistance noticed on palpating the muscles overlying inflammatory conditions of the pleura and pulmonary parenchyma, due to (1) acute spasm of the muscles when the inflammatory process is acute; (2) pathologic change in the muscles when the inflammation is chronic. Muscle rigidity affects both the superficial and deep muscles. It is easily found when the inflammatory process is acute, for then the muscle stands out in acute spasm, or when the process is chronic in character and wide in extent the pathologically changed muscles are easily felt. It is difficult to find if the process is small in extent and not very active. It is important as a differential point in diagnosis between an acute and quiescent process in the lung. If the muscles are in spasm my experience would warrant the statement that the underlying process is acute. Muscle rigidity is not only a valuable sign, but it offers a rational explanation for one other sign, thus limited motion, lessened respiratory murmur, harsh respiratory murmur, prolonged expiration, ankylosis of the costosternal joint, curvature of the spine and increased resistance and slightly altered pitch on percussion.

Prophylaxis of Pellagra

Dr. C. H. Lavinder, Washington, D. C., in a paper on this subject reviews very briefly the theories as to etiology and discusses two points: first, the communicability of the disease, and, second, the practical application of its alleged relation to the use of spoiled corn as a food stuff. He considers that our experience in the United States is too limited for us to base conclusions thereon and that it would be unwise to reject the accumulated observations and deductions of other able men in other countries whose experience has been so much wider and fuller than our own. Since practically all observers agree that the disease is not communicable, and since quarantine measures are not in force against it, he thinks it is not necessary in the present state of our knowledge to adopt quarantine measures. So far as its relation to spoiled corn is concerned, he admits that much of the evidence is unsatisfactory, but since practically all theories of the disease take corn into more or less essential consideration and since Italy, in her determined fight against pellagra, has based most of her procedures on this theory and is claiming a fair share of success, we cannot at present do otherwise in our prophylactic measures than recognize some relationship between corn and pellagra.

COLLEGE OF PHYSICIANS OF PHILADELPHIA

Regular Meeting, Oct. 6, 1909

The President, Dr. James Tyson, in the Chair

Extrasystolic Arrhythmia Simulating Heart-Block

Dr. George W. Norris: The paper is a report of four cases, one of which presented very unusual and perplexing features. This case was first believed to be one of auriculoventricular heart-block, but on careful study proved to be one of extrasystolic arrhythmia. The curious feature of the case was that the patient's peripheral pulse rate would suddenly drop from 80 to 40. This change could for a considerable period of time be brought on at will by a few simple procedures, such as a rapid change of posture, taking a deep inspiration, or compressing the abdomen. Later, in the course of the disease, this tendency became less marked, and a typical pulsus alternans developed. The post-mortem examination revealed well marked arteriosclerosis, with fatty and fibroid changes in the heart muscle.

DISCUSSION

Dr. William Pepper: An interesting point to me is the lack of our ability to feel these small extrasystoles. Even with the finer instruments, at times, one cannot perceive them at the wrist or in the brachial artery. I do not say that we are able to tell whether in the small beats the valves open or not, but I think that when we are unable to detect by instrumental means any wave in the peripheral arteries, then probably the aortic valves have not opened.

Dr. S. Solis Cohen: I should like to ask Dr. Norris to test in various ways what has been well termed the reserve force of the heart, to include the effect of local applications of heat and cold over the precordium. A rough but ready way of determining the amount of good cardiac muscle remaining is to note by the finger the response of the heart to momentary applications of heat followed by cold. When the response is good the prognosis is rather favorable. When this application increases the arrhythmia the prognosis is bad.

Dr. Robert N. Willson, Jr.: In studying certain problems in tuberculosis of the guinea-pig I noticed on taking out the heart that when it was exposed to the air the pulsation which almost immediately after removal of the heart from the pig assumed the character of a fibrillary tremor, again changed its nature. The ventricular contractions stopped almost completely, and the auricular systoles continued their rhythm. Then the auricular contraction seemed to cease and the ventricular resumed and later again discontinued. Then for a time and occasionally both were synchronous. Finally, before the contractions stopped altogether, the ventricular systoles gradually increased in power and extent, and the contractions seemed to recede toward the auricle and then toward the great sinus and then disappear. If these phenomena are produced in any such way in the human body in disease, it must needs be that very trifling alterations in the conditions of the body, chemical changes, etc., assume great importance in alteration of the normal beat. This would account for many of the conditions which we now try to explain along chemical lines. If the human heart acts as does the guinea-pig's, then I think the conditions in disease are not understood. We know simply that dissociation of the auricles and ventricles is possible. The causal factors and the governing laws still remain obscure.

Dr. John B. Roberts: I have been interested in watching the intermission of the pulse in two boys who have had measles. In one the intermittent pulse was present for a year and a half after the attack and finally diseappeared. My explanation was that there was a mild myocarditis. In the other at the time of the intermission of the pulse I have noticed the extra beat of the heart, suggesting the motion of a fish lying in the bottom of a boat. This, I suppose, was the extrasystole. The boy seems to be better under belladonna than under digitalis, although the improvement may be due to the fact that he is regaining the general tone of the muscle and that the irritability is subsiding under the increased time rather than from the belladonna.

Dr. A. A. Eshner: This case emphasizes my view that there is a relation between the varied forms of myocardial degeneration that for convenience's sake we classify clinically as myocarditis and the condition of heart block. It seems to me that degeneration of the heart muscle, whether fibroid or gummatous, not necessarily involving the auriculoventricular conducting bundle of His, may cause degeneration in conductivity or contractility or in the other attributes of the muscular wall of the heart and give rise to disorders of rhythm that we include under the general designation of arrhythmia, and of which heart-block must be considered as an extreme type. I should imagine that the underlying factor in the circulatory variations was the state of the myocardium and that by reason of its inefficiency it was unable to compensate for the increased burden thrown on the heart by reason of the increased blood-pressure.

Dr. G. W. Norris: It has been repeatedly shown that partial ligation of the aorta in animals will produce extrasystoles. It is quite common to find arrhythymias in young children, particularly after febrile attacks. The type is better designated as sinus arrhythmia. It is probably due to over-action of the vagus nerve affecting the sinus rhythm. Therefore, when belladonna, which depresses the vagus nerve, is given the arrhythmia disappears. While I do not mean to indicate that we have by any means cleared up the whole question, taking up the matter on the basis of the myogenic theory, and considering the five functions of the heart muscle independently, we are able to theorize just as Ehrlich's hypothesis of the blood complement has furnished the bacteriologist with a working basis. Dr. Eshner, in his remarks about blood pressure, stated what I had intended to say.

Spasm of the Arteries and Report of a Case of Vasomotor Neurosis

Prof. Paul Lazarus, of Berlin, presented, by invitation, this paper. Professor Lazarus spoke on the vasomotor neuroses, and dealt with functional in contradistinction from anatomic disorders. Under ordinary conditions the circular muscular fibers of the arteries predominate in action over the longitudinal fibers, thus maintaining normal vascular tone. This may be increased by a variety of influences acting from without or from within. Vasomotor neuroses may be of two types, hypertonic or hypotonic, or there may be a combination of the two. Among them may be included migraine, exophthalmic goiter, sclerodactyly, scleroderma, Raynaud's disease, erythromelalgia, paresthetic meralgia, dermographism, angina pectoris, pseudoangina, Stokes-Adams syndrome, paroxysmal hemoglobinuria and hematuria, the crises of locomotor ataxia and vasomotor ataxia. He cited an instance in which arteriosclerosis developed in the train of long-continued increase in blood-pressure apparently of functional origin. He cited another instance in which in the sequence of emotional shock pallor, cyanosis, atrophy and gangrene developed in the upper part of the body, while hyperemia and hypertrophy developed in the lower part. He pointed out that no functional disturbance could take place without vasomotor or nutritive change.

DISCUSSION

Dr. S. Solis Cohen: There seem to be three elements in the origin of vasomotor disorders: (1) A constitutional liability of the patient; (2) an exciting cause; (3) the point which to me is most obscure—a local determinant. Just why the same patient should have at one time migraine; at another a condition simulating hepatic colic, at another hemianesthesia or asthma or urticaria or circumscript edema of the skin or mucous membranes, is yet to be determined. In some instances, a very slight mechanical force, scarcely to be termed trauma, determines it. At other times the exciting agent, a toxin or thermic change, acts locally, as when the hand plunged into ice water exhibits Raynaud's phenomena or intestinal fermentation gives rise to enteralgia. I do not know why one of my patients who has recovered from Graves' disease should be troubled with recurrent spasm of the temporal artery so that vessel can be seen becoming more distended and more tortuous above the point of constriction, this being accompanied with intense pain which lasts for a minute or two and which can be relieved immediately by the administration of nitroglycerin to relax the spasm, nor do I know why hemoglobinuria follows application of ice to the loins, or to the feet, as happens in another patient. Evidently there is a local determinant in each case. The important point is that we should diagnosticate the individual rather than the attack.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CALIFORNIA: Los Angeles, December 7. Sec., Dr. Charles L. Tisdale, Butler Bldg., San Francisco.

DELAWARE: Regular, Dover, December 14; Homeopathic, Wilmington, December 14. Secretary of the Medical Council, Dr. H. W. Briggs, Wilmington.

IOWA: State House, Des Moines, Dec. 7-9. Sec., Dr. L. A. Thomas.

KENTUCKY: The Armory, Louisville, December 14. Sec., Dr. J. N. McCormack, Bowling Green.

MARYLAND: 1211 Cathedral St., Baltimore, December 14-17. Sec., Dr. J. M. Scot

PENNSYLVANIA: Philadelphia, December 14-17; Electic 4-17. Secretary of the Medical Counc larrisburg.

VIRGINIA: Lynch)r. R. S. Martin, Stuart.

Michigan May and June Reports

Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, reports the written examinations held at Detroit and Battle Creek, May 24-26, and at Ann Arbor, June 8, 1909. Besides the written examination a practical test in refraction was required. The number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75.

At the examinations held May 24-26, the total number of candidates examined was 62, of whom 57 passed, 1 failed, and 2 were conditioned. The papers for two candidates have not been completed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
American Medical Missionary College	(1909)	82.7, 83.6, 88.7, 89.6, 90.2, 91.5
Hahnemann Medical College and Hospital, Chicago	(1908)	76.7
Northwestern University Medical College	(1908)	85.3
Louisville and Hospital Medical College	(1908)	78.4
Kentucky School of Medicine	(1908)	81.4
University of Michigan, College of Medicine	(1890)	87.3; (1908) 88.7; (1909) 86.
University of Michigan, Homeopathic College	(1908)	86.3
Detroit College of Medicine	(1909)	77.6, 78.1, 79.3, 80.5, 81.3, 81.9, 82.1, 82.6, 82.9, 83.4, 83.7, 83.7, 84.1, 84.2, 84.3, 84.3, 84.4, 85.3, 85.4, 85.5, 86.4, 86.6, 87.5, 87.6, 87.7, 87.7, 88.3, 88.4, 88.5, 89, 89.5, 89.5, 89.9, 89.9, 90.
Detroit Homeopathic College	(1909)	76.9, 78.1, 78.5, 78.9, 80.7
Eclectic Medical Institute, Cincinnati	(1907)	81.2
Jefferson Medical College	(1904)	78.5
Imperial University, Warsaw	(1904)	82.5
FAILED		
University of Michigan, Homeopathic College	(1908)	74
CONDITIONED		
Louisville Medical College	(1902)	*77
Detroit College of Medicine	(1909)	**79.1

* Conditioned in surgery.
** Conditioned in eye, ear, nose and throat.

At the examination held June 8, the total number of candidates examined was 79, of whom 70 passed, 1 failed and 3 were conditioned. The papers for five candidates have not been completed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
American Medical Missionary College	(1907)	75
University of Louisville	(1908)	86.6
Rush Medical College	(1909)	86.7
University of Michigan, College of Medicine	(1909)	78.4, 79.8, 80.7, 81.8, 82.6, 82.8, 83, 83.3, 83.5, 83.8, 83.9, 84, 84.1, 84.2, 84.2, 84.2, 84.4, 84.7, 84.7, 84.8, 85.2, 85.2, 85.2, 85.3, 85.5, 85.5, 85.5, 85.9, 86.2, 86.7, 86.8, 86.8, 86.8, 86.8, 86.9, 86.9, 86.9, 87, 87, 87.1, 87.3, 87.4, 87.4, 88.1, 88.1, 88.3, 88.7, 88.7, 88.9, 89.2, 89.5, 89.5, 89.9, 90.7, 91.1, 91.7,
University of Michigan, Homeopathic College	(1909)	82.6, 85.1, 86.1, 86.2, 86.4, 87.1, 87.2, 87.4, 88.2, 88.8, 89, 90.3.
FAILED		
Kentucky School of Medicine	(1907)	71.5
CONDITIONED		
University of Michigan, College of Medicine	(1909)	*77.1
Univer athic College	(1909)	*80.5, **82.8

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Pennsylvania June Reports

The Medical Council of Pennsylvania reports the written examinations held at Philadelphia, Pittsburg and Harrisburg, June 22-25, 1909. The number of subjects examined in was 7; percentage required to pass, 75.

At the examination held by the State Medical Society of Pennsylvania, the total number of candidates examined was 354, of whom 334 passed and 17 failed. Three candidates did not complete the examination. The following colleges were represented:

College	Year Grad.	Total No. Examined.
PASSED		
	(1891)	1
	(1891) (1908) (1909)	3
icine and Surgery	(1909)	2
	(1909)	1
	(1907) (4, 1909)	5
Baltimore Medical College	(1909)	9
Woman's Medical College, Baltimore	(1908)	1
College of Phys. and Surg., Baltimore	(1908) (2, 1909)	3
Baltimore University	(1903)	1
University of Maryland	(1899) (1903) (1905) (1906) (2, 1909)	6
Johns Hopkins University	(1907) (1908) (2, 1909)	4
Maryland Medical College	(1908) (3, 1909)	4
University of Michigan, College of Medicine	(1909)	1
Syracuse University	(1908)	1
University of Buffalo	(1909)	1
Columbia University, Coll. of Phys. and Surgs.	(1907)	1
Cleveland College of Physicians and Surgeons	(1908)	1
Western Reserve University, Cleveland	(1909)	3
Starling Medical College	(1898)	1
Univ. of Pennsylvania	(1906) (1907) (2, 1908) (63, 1909)	67
Woman's Medical College of Pennsylvania	(1907) (1908) (11, 1909)	13
Temple University	(1909)	16
Jefferson Medical College	(1905) (2, 1906) (3, 1908) (62, 1909)	68
Medico-Chirurgical College, Philadelphia	(1907) (2, 1908) (61, 1909)	64
University of Pittsburg	(1907) (3, 1908) (49, 1909)	53
University of Toronto, Ontario	(1898) (1904)	2
McGill University, Canada	(1909)	1
University of Innsbruck, Austria	(1908)	1
FAILED		
Howard University	(1907)	1
Illinois Medical College	(1907)	1
Medical College of *Indiana*	(1898)	1
Louisville and Hospital Medical College	(1908)	1
University of Louisville	(1909)	1
University of Maryland	(1909)	1
Atlantic Medical College	(1900)	1
Leonard Medical School	(1909)	1
Jefferson Medical College	(1909)	1
University of Pittsburg	(2, 1908) (3, 1909)	5
Medico-Chirurgical College, Philadelphia	(1909)	1
Temple University	(1908)	1
University of Naples, Italy	(1898)	1

At the examination held by the Homeopathic Medical Society of Pennsylvania, the total number of candidates examined was 44, all of whom passed. The following colleges were represented:

College	Year Grad.	Total No. Examined.
PASSED		
Atlantic Medical College	(1909)	1
New York Homeo. Med. Coll and Hosp.	(1908) (1909)	2
Cleveland Homeopathic Medical College	(1909)	1
Jefferson Medical College	(1908)	1
Hahnemann Med. Coll. and Hosp., Philadelphia	(1909)	39

At the examination held by the Eclectic Medical Society of Pennsylvania, the total number of candidates examined was 27, of whom 25 passed and 2 failed. The following colleges were represented:

College	Year Grad.	Total No. Examined.
PASSED		
Illinois Medical College	(1908)	1
Bennett Medical College	(1909)	2
National Medical University, Chicago	(1908)	1
Atlantic Medical College	(4, 1908) (7, 1909)	11
Maryland Medical College	(1907) (3, 1909)	4
Baltimore Medical College	(1907)	1
Baltimore University	(1903)	1
University Medical College, Kansas City	(1905)	1
Eclectic Medical Institute, Cincinnati	(1909)	3
FAILED		
Baltimore University	(1902)	1
University of Pittsburg	(1907)	1

Rhode Island October Report

Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the written examination held at Providence, Oct. 7-8, 1909. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 80. All applicants were required to give a laboratory test *in analysis of urine*. The total number of candidates examined was 14, of whom 8 passed and 6 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Yale University	(1907) 87.7; (1909)	95.4
George Washington University	(1909)	92.2
College of Physicians and Surgeons, Baltimore	(1909)	90.6
University of Maryland	(1909)	81
University of Michigan	(1883)	80.0
Dartmouth Medical School	(1887)	81.4
Cornell University Medical College	(1908)	91.4
FAILED		
Atlantic Medical College	(1909)	61.6
Baltimore Medical College	(1907) 72.8; (1909)	76.6
College of Physicians and Surgeons, Baltimore	(1909)	75.8
Laval University, Quebec	(1904) 68.4; (1909)	74.7

Book Notices

L'Hypophyse et la Médication Hypophysaire. Par M. le Docteur Arthur Delille, Membre Adjoint de la Société Anatomique. Paper. Pp. 336. Paris: G. Steinheil, 1909.

The present volume is valuable not only because of the records of experimental work by Dr. Delille but because it contains a thorough review of the rapidly increasing literature of the subject. The conflicting views concerning certain phenomena are set forth, and an effort is made to reconcile the discrepancies, particularly those regarding the effects of hypophysectomy. The experimental work by Dr. Delille is concerned almost entirely with the effect of extracts of hypophysis when injected into animals and man during health and in disease. There is no discussion regarding the technic of operating on the gland. Dr. Delille discusses the experiments of Masay, which attempted to create for experimental purposes, by the administration of a so-called hypophysotoxic serum a condition analogous to that following surgical removal of the gland. This serum was prepared by immunizing guinea-pigs with an extract of hypophysis. He criticises the value of the conclusions drawn because no account was taken of the possible effect of the serum on the rest of the body, particularly the other glands, but he admits that work by this method would be valuable if careful observations were made concerning the effects of the serum. In the essential points Delille is in harmony with Cushing (The Journal, July 24, 1909, liii, 249), but he differs in several details. He finds that in animals an anterior lobe extract causes moderate hyperactivity of the hypophysis and thyroid, but Cushing states that it does little or nothing.

Some of Delille's conclusions are especially interesting, as for example, the signs and symptoms of diminished and increased activity of the gland. He sums up those of hypophyseal insufficiency and dyshypophysism as follows: hypotension, tachycardia, distressing sensations of heat, profuse sweats, oliguria, anorexia, asthenia, disturbances of nutrition (loss of flesh; obesity in certain cases, trophic changes, etc.), psychic troubles, insomnia, disturbed growth (physical and mental backwardness), diminution of resistance to intoxications, special signs of intracranial compression due to pituitary tumor. The evidences of hyperhypophysism he says are: hypertension, polyuria, glycosuria, troubles of nutrition (loss of flesh; often obesity, etc.); the number of blood-cells equal or above normal; hypertrophic processes of development (gigantism, acromegaly); psychic troubles, somnolence; nearly always a genital insufficiency; frequently hypothyroidism; and special signs of intracranial pressure due to pituitary tumor. Cushing states that polyuria, sometimes associated with glycosuria, is a somewhat characteristic symptom of hyposecretion of the anterior lobe instead of hyperhypophysism. Moreover, he regards adiposity as a more constant and more important sign of hyposecretion than does Delille.

Concerning the indications for hypophyseal medication Delille seems to hold perhaps too radical an opinion for the present state of knowledge when he makes the following statement: "The direct hypophyseal organotherapy will find its indication in every case in which one wishes to raise the arterial tension, slow the pulse, increase diuresis, suppress troublesome sensations of heat and profuse sweats, ameliorate the appetite and sleep, cause the disappearance of asthenia, attenuate certain psychic troubles, exercise a stimulating action on nutrition and development; in short, hypophyseal organotherapy will be prescribed in every case in which the certain or probable diagnosis of hypophyseal insufficiency shall be made. One should abstain from this medication with patients who have a hypertension."

As regards the administration of the extract Delille says: "One should use by preference the total extract, for it is, in equal doses, nearly as active as the posterior lobe; besides it is easier to prepare and consequently less expensive. The properties of the anterior lobe are still too mysterious to warrant the use of its extract in practice. The daily dose of the total extract which one should advise ought not to be more than that of half of one fresh gland of the beef, save in exceptional cases. The patient should be strictly watched in the course of the treatment; the arterial pressure should be taken regularly and one should depend on it to increase or diminish the doses, to suspend or to resume medication."

Lehrbuch der ~ Herausgegeben von Prof. Dr. J. Schwalbe, Price, 26 marks. Stuttgart: Verlag vor

The necessity for a special work on the disease of old age does not at first seem perfectly clear. While it may be argued that there is as much justification for a work of this sort as for one on diseases of children, most readers will feel that the peculiar problems presented by infant-feeding, the rapid progressive changes of infancy and childhood, the partiality of so many acute infectious diseases for childhood, and certain anatomic and physiologic peculiarities of the young, offer valid reasons for the existence of treatises on the diseases of children, which reasons do not quite have their counterpart when the maladies of old age are considered. One must admit, however, that certain characteristics of old age are worth emphasizing and perhaps even embodying in a special volume; one thinks at once of the regressive and atrophic changes in tissues, the vascular scleroses, the frequency of carcinoma, the vulnerability to pneumonia, etc.

These peculiarities are well brought out in this work. Of necessity, much that is not peculiar to old age is embodied. Perhaps we ought not to say of necessity, for we are inclined to think that had there been a liberal omission of much of the description that would apply to disease of all ages (which knowledge should be assumed as possessed by the reader), and if there had been more concentration of the peculiarities of the various affections in old age, the value of the book would have been increased.

Most of the articles are good, as the names of the writers would lead us to expect. Some of these writers are themselves old, but they write with the vigor of youth and the wisdom of advanced years. Some articles are unusually full, e. g., Hope-Seyler's on respiratory diseases, and Ortner's on typhoid fever. Fürbringer's article on prostatic hypertrophy is reasonably complete, yet carcinoma of the prostate is covered in half a page. Ebstein might appropriately have gone more into details on arteriosclerosis.

The book may be commended as thoroughly reliable, though we feel that the physician who needs help in the diagnosis of treatment of a disease in the aged, be it pneumonia, typhoid, gastritis or carcinoma of any organ, will be more apt to turn for help to his work on general medicine or to special works than to this book, which, after all, is much on the order of a compend of symptoms and signs of disease as seen in the old with the treatment.

Causes of Disability as Applied Under Accident and Health Insurance Policies. Designed for the Use of Insurance and Fraternal Examiners, General Practitioners and Students of Medicine, Attorneys and Corporations. By Charles Hamilton Harbaugh, M.D., Medical Director American Assurance Company. Cloth. Pp. 650, with illustrations. Price, $6. New York: The Spectator Co.

The average physician is sadly deficient in his knowledge of the laws of accident and industrial insurance and of the proper method of making examinations and writing out reports concerning his findings in this class of cases. The object of this work is to supply this knowledge; but on reading it one is impressed by the fact that it is apparently written in the interests of the accident-insurance companies rather than in the interest of the physician or of scientific medicine; invidious comparisons are frequently made between the life-insurance examiner and the accident-insurance examiner.

Physicians are urged to "develop themselves into adjusters for the companies they represent." "A doctor who adjusts for an accident-insurance company is so well intrenched with his company that it is almost an impossibility for another physician to secure any examinations from the company."

For all of this examining and adjusting and playing the interests of the company against those of the patient, the compensation is altogether inadequate, for it is stated that "accident-insurance companies seldom pay more than two or three dollars for each examination." That the advice given in settlement of cases is at times to the advantage of the company at the expense of what is just to the insured, is well shown on page 102, under "Diseases of the Brain." "When the diagnosis of an abscess of the brain exists and there is a history of a severe injury, such as a fracture of the skull or a bad concussion, it is best for an insurance company to effect an advance settlement with an individual who may be carrying an accident-insurance policy by allowing one or two months of this disability. Should an adjustment not be secured, the abscess may terminate in death, and if this occurs within ninety days from the date of the accident, the company may be liable for a death claim for the amount of the policy and this would be much more than if the above time of total disability had been paid.

"Insurance companies do not care to take chances on these cases and prefer to make a settlement in advance."

While the volume contains information of value to those engaged in this particular line of work, one cannot but be impressed by the fact that much of it is written from a biased point of view.

Text-Book of Hygiene. By George H. Rohé, M.D., Late Professor of Therapeutics, Hygiene and Mental Diseases in the College of Physicians and Surgeons, Baltimore, and Albert Robin, M.D., Professor of Pathology, Bacteriology and Hygiene, Medical Department Temple University. Fourth Revised Edition. Cloth. Pp. 582, with illustrations. Price, $3. Philadelphia: F. A. Davis Co., 1908.

This work, during the lifetime of Dr. Rohé, enjoyed not a little well-deserved popularity, which, after his death, for lack of revision, suffered partial eclipse. It now appears edited by Dr. Albert Robin, assisted by special writers on such topics as military, naval, school and personal hygiene and quarantine.

The editor has had an arduous task before him, that of adding, subtracting and correlating in such a way as not to detract from the ensemble and style of the book as Rohé left it. The result is perhaps as satisfactory as could be attained by any means (short of radical rewriting of the whole book). There might have been a more general modernizing of much of the sources of statistics and opinions throughout the book; this criticism is particularly applicable to the retention of Pettenkofer's theory in references to typhoid fever and Asiatic cholera. The pruning-knife, too, might have been more vigorously used in several places in the chapters dealing with air, soil, antiseptics and disinfectants and the infectious diseases.

A few typographic errors have crept in, noticeably in the disarticulation of the last paragraph on page 563 from its context at the end of the second paragraph on page 562. The photographic reproductions, Figures 7, 46, 47 and 50 are very indistinct, owing, doubtless, to the unsuitability of the paper for this sort of work. Figure 45 is reversed. The book in its general make-up is pleasing and its contents well within the bounds of accuracy.

The Practical Medicine Series. Edited by Gustavus P. Head, M.D., Professor of [illegible] Rhinology, Chicago Postgraduate Medical School. [illegible] RY. Edited by John B. Murphy, A.M., M. [illegible] Surgery in Northwestern University, Chicag [illegible] th illustrations. Price, $2. Series 1909. [illegible] Publishers.

The volume on General Surgery of the Practical Medicine Series for 1909 is well up to the high standard of excellence which has characterized its predecessors. The accomplished editor of this *multum in parvo* has so thoroughly reviewed the surgical literature of the past year that very little of importance has been omitted. We can heartily endorse and commend to the particular notice of hospital authorities the remarks of the editor on the necessity for reform in the methods of administration of anesthetics. The administration of anesthetics by persons without special training, as practiced to-day in many of our hospitals, is, in the light of modern knowledge of the subject, almost criminal. While the greater part of the book is devoted, as might be expected, to the surgery of the abdomen, in which wonderful progress is to be noted, the whole field of general surgery is well covered. With its full index this little volume is a valuable accession to the library of either surgeon or general practitioner.

Suture of Arteries: An Experimental Research. By E. Archibald Smith, M.B., Ch.B., Victoria University, F.R.C.S., England. Cloth. Pp. 70, with illustrations. Price, 90 cents. New York. Oxford University Press, 1909.

The paucity of literature in the English language on the subject of suture of arteries, the little that exists being mainly scattered in journals, has led Smith to prepare this little monograph. The first two sections are devoted to historical description of the various methods of operation and brief lists of cases in which they have been employed. The third and fourth sections are devoted to a description of the method of suture devised by the author, and an account of research work done by him. From his experimental work and the study of reported cases, Smith concludes that successful suture of blood vessels depends, under strict asepsis, on the bringing together of intima with intima with the minimal amount of suture exposed to the blood current. This, he believes, can be most certainly accomplished by a quilled suture method of his own device. The principal methods in vogue are clearly described and illustrated. The typography of the book is excellent, but it is to be regretted that the fairly complete bibliography is nearly two years behind the date of the preface.

Principles of Pharmacy. By Henry V. Arny, Ph.G., Ph.D., Dean and Professor of Pharmacy in the Cleveland School of Pharmacy, Pharmacy Department of Western Reserve University. Cloth. Pp. 1175, with 246 illustrations. Price, $5 net. Philadelphia: W. B. Saunders Co., 1909.

There are already in the field a considerable number of works on pharmacy, but the subject has by no means been exhausted. In the preface Professor Arny states that the "frank intention of this book is to explain the Pharmacopeia from its pharmaceutical standpoint. At the same time, however, the book disclaims all attempts to be a text-book in chemistry or botany."

Professor Arny treats the subject in seven sections or parts. In Chapter 1 of the first part the origin, history and scope of the Pharmacopeia are explained in detail. The later chapters of Part I are taken up with a description of the technic of pharmaceutical operations. Part II considers the official Galenical preparations and such others as are worthy of notice. In Parts III and IV the chemical relations of drugs are considered. The official pharmaceutic tests and assays are grouped together in Part V, a feature not found in other treatises on pharmacy, although an arrangement somewhat similar to this has been purposed for the next U. S. Pharmacopeia. The prescription in all its phases is considered in Part VI. Part VII is a manual of laboratory exercises involving all of the operations of practical pharmacy, and including exercises in equation-writing and chemical arithmetic.

A few verbal inaccuracies may be noted, but they are not such as greatly to impair the value of the work. While some might doubt the need of introducing the rudiments of physics and chemistry, the sections on these subjects will be of use to the practicing pharmacist whose preliminary training is limited. On the whole the book is well written and should prove particularly valuable to the student of pharmacy and even to the physician as a reference work.

[illegible] By May Cushman Rice, M.D., [illegible] in the Illinois School of [illegible] with illustrations. Price, $1. Chicago: L. I. Laing & Co., 1909.

For those who believe in electricity as a curative measure, Dr. Rice has written an epitome of the therapeutic indications for electrical treatment. She has given concise and definite information as to the action of different currents, including cataphoresis and electrolysis. After explaining the therapeutic value of the poles, Dr. Rice gives a simple method of polarizing a battery that will insure definite results. The cataphoretic application of thiosinamin is mentioned for dissolving scar tissue. The questionable value of the *x*-ray in the treatment of carcinoma is very sanely considered as a valuable adjunct to surgery and a boon to the sufferer of inoperable carcinoma. In Dr. Rice's remarks on fibroid she has overlooked the risk of using electricity without a microscopic examination, which alone will determine whether or not the tumor is malignant; neither is she concerned with the possibility of a secondary malignant growth developing in a fibroid tumor. In the treatment of acute inflammations, the question of the element of the phagocytic action of the blood is entirely ignored, and from the results which she has obtained in acute conditions, and the length of time requiring a symptomatic cure, the convalescent period does not seem to be shortened. The deductions offered as to the efficacy of electricity in cellulitis and salpingitis are not convincing, or in many respects scientific.

Medicolegal

Power of Claim Agent to Employ Physician

The Appellate Court of Indiana, Division 2, says that the case of Southern Ry. Co. vs. Hazlewood (88 N. E. R. 636), was brought by the latter, a physician, to recover the value of services rendered a brakeman injured in the company's service. The evidence showed that the brakeman was injured during the night and was taken to a place where he was examined by the company's regular surgeon, who at that time gave him no medical attention beyond prescribing a headache powder; that the next morning his father, a physician who lived at a distance, came to see him, and dismissed the company's surgeon, whereupon the plaintiff became the attending physician. A claim agent, or "assistant law agent," called on the injured employee the same morning. There was evidence that he told the brakeman to keep the plaintiff, and the company would pay for it. The brakeman was later removed to a hospital, where on at least two occasions, the claim agent inquired how he was getting along, told him to let the plaintiff continue his treatment, and that the company would pay the bill. The plaintiff testified that the claim agent said that the brakeman was dissatisfied with the company's surgeon, and that he wanted him to go ahead and look after him, and that he should rest easy about the bill: that the company would as soon pay him as any other physician, and for him to keep account of his bill, and the company would pay it. The plaintiff ordered a spinal brace for the patient of a surgical instrument house in Louisville and the bill was sent to the company's general superintendent and paid. The brakeman testified that the settlement was made between himself and the company by its agreeing to give him $5,300 and pay his hospital expenses and doctor bills.

The court holds that the first paragraph of the complaint, which was what is called a common count "for services rendered at the special instance and request of the defendant," was sufficient, as railroad companies may employ surgeons generally.

The company urged that the claim agent had no authority to employ a physician. But he had authority, the court says, to compromise the claim against it, and to minimize damages recoverable from it. The settlement which he made was adopted. The employment of a competent surgeon might be one step in minimizing such damages and in procuring such settlement. It was therefore germane to the employment. The company, having held him out as possessing authority, was in any event precluded from denying it.

The case of Louisville, etc., R. Co. vs. Smith, 121 Ind. 353, strongly relied on by the company, was not in point. The authority of a conductor and a claim agent rests on a different basis. The natures of the two employments are essentially different. The duty of the "assistant law agent" was to visit injured persons, and to settle or to compromise with them. The employment of a physician is reasonably incidental to those duties, and whether he acted within the scope of his authority was a matter of proof.

The promise of the railroad company to pay the plaintiff was not within the statute of frauds, so as to be required to be in writing, for two reasons: (1) The debt was the debt of the company; (2) where a promise is made to a debtor to pay his debt to a third person, and sufficient consideration has passed between the debtor and promisor, an action may be maintained without the discharge of the original debtor.

A judgment for $196 in the plaintiff's favor is affirmed.

Evidence and Certainty Required to Sustain Malpractice Cases

The Supreme Court of Oklahoma holds, in Kernodle vs. Elder (102 Pac. R. 138), that, in suing a physician for malpractice in setting and treatment of a fractured limb, where there is no guaranty of cure or contract for extraordinary skill, and where the evidence fails to show that the results are not such as usually and ordinarily result in such cases where treated by an ordinarily skilful physician using ordinary care, then there is a failure of proof, and the plaintiff is not entitled to recover. Where in such a case it is apparent from the record that the claim of the plaintiff cannot be sustained, on reversal the court will not remand for new trial, but will direct a dismissal.

There are no classes of cases, perhaps, which go to juries, or, indeed, with which lawyers and courts are called on to deal, the court says, where results are so uncertain and so frequently unsatisfactory as cases involving damages against physicians for alleged malpractice in their efforts to alleviate the ills to which human flesh is heir. It is nearly always the defendant's judgment which is on trial; and on the hearing the jury and the parties are all sitting and speaking after the fact, while the unfortunate physician when he acted was perhaps required by the conditions to grope, deliberate, and often speedily act, and always before the fact. After he has acted and the results are different than he desired or expected, and different than were expected or desired by the patient, if a suit is brought, the physician is confronted with all of the after-acquired knowledge, and his responsibility is weighed from that standpoint rather than from the true one. A preponderance of the evidence in cases of this character is sufficient to sustain a plaintiff's cause. No more should be required, and no more is required; but it should be certain on the part of the court and the jury that they are acting from actual evidence before them, properly referable to the cause, and that the judgment, when against the physician, is based on such evidence, and not on bias, conjecture, or inference.

In this case the plaintiff claimed that he fractured the bone of his right hip joint, and that the defendant negligently and unskillfully diagnosed the difficulty, in that he dressed and bandaged the limb as if the break were between the knee and the hip, and as though the fracture were in the vicinity of the knee, and that by reason of this error on his part the fracture itself was left wholly unattended and uncared for. The evidence showed that the plaintiff, who was a man of the age of 56 years and of fairly good health and activity, fell on the ice and fractured the femur bone of his right leg at or near the neck. He called in the defendant to treat him, and the defendant arrived in about two hours after the accident, placed the plaintiff under the influence of chloroform, and made an examination. The plaintiff and a number of other witnesses, members of his family and neighbors, testified that the defendant informed him and them that the limb was fractured at a place above the knee, between it and the upper part of the femur, perhaps about the middle. It also appeared that the defendant applied a "Buck's extension," which consisted of, in this case, a splint in the shape of a board, attached to the limb on the under side, to which was fastened a rope which extended to a window frame, with a 5½-pound iron attached, for the purpose of tiring and extending the muscles to bring the broken parts of the bone in apposition. The physician remained with the plaintiff all of that night, and on the morning of the second day thereafter he returned, bringing with him what is commonly known as a "Hodgen splint," an appliance which he had made, consisting of an iron, bent much in the shape of a hairpin, the two sides laced together with webbing or cloth, and of about the length and shape of the leg. Into this the limb was placed with the foot near the loop, the open end being toward the body, the inside piece being about 10 inches shorter than the outside piece. This entire frame was then swung about 2 inches clear of the bed, allowing the limb to lie in this splint, which was attached to a pulley from the ceiling or window ledge by ropes or cords. That in this condition the plaintiff remained in bed about three weeks, during which time he was waited on by the physician. The plaintiff testified that his limb was left by this treatment in a weak or stiff condition in the hip, which interfered with its use; that it hurt him in walking, and he stated: "I cannot use it as well as I could before it was hurt; it is stiff, and the muscles won't expand;" also, that he could not walk without the use of a cane or crutch.

The plaintiff also stated that after the treatment by the defendant he had applied to two local physicians for treatment, one of whom testified that he made an examination of the limb and was present when the same was examined with the *x*-ray. That the examination revealed an impacted fracture at the neck of the femur, the result of which, he stated, necessarily shortened the limb. He further testified that in a case of this character it was very likely that treatment would not produce the best results, and that the limb would be shorter than its normal length.

From the testimony of the local physicians it appeared that the injured limb was from 1 inch to 1½ inches shorter than the other, and from this evidence no other inference could be drawn than that this was as good a result as could be reasonably expected, considering the age and condition of the plaintiff. At all events, there was an absolute lack of any evidence, the court says, showing that in cases of this character, under any kind of treatment, the limb is ever perfect afterward or equals in length the uninjured limb. In this case the burden was not on the defendant to show that the plaintiff's limb was in as good condition as medical science and skill could place it after its injury, but the burden was on the plaintiff to show that it was not. This, in the court's judgment, he totally failed to do.

Should it be shown by the evidence that the limb which the plaintiff had was not such a limb as a physician of ordinary skill and using ordinary care and diligence should have left him with, after treating it, then the burden would be on the plaintiff, in order to sustain the verdict in this case, to show by the evidence that this result was brought about through lack of skill on the part of the physician, or through some wrongful or negligent act of omission or commission on his part. Neither of these conditions should be supported merely by theory, conjecture or inference, but they should be based on tangible, substantial evidence which the court and the jury may grasp and understand.

The plaintiff asked for $1,000 damages. He obtained a verdict for $500. But with all of the evidence before it on which the plaintiff could possibly predicate the hope of recovery, and there being in the court's opinion a total want and absence of the necessary elements to entitle him to recover, the court remanded the case with instructions to dismiss it.

Death from Erysipelas Following Injury is Attributable to the Latter

The Supreme Court of Montana says, on the second appearance before it of the case of McAuley vs. Casualty Company of America (102 Pac. R. 586), that it had a different record before it from what it had the first time. According to the latter, the court was clearly justified in concluding that a person could become ill from erysipelas in some manner other than by inoculation from an outside germ, through an abrasion of the skin. But all of the testimony on the second appeal showed that a person can contract erysipelas in but one way, namely the introduction of the germ of the disease through an abrasion of the skin. The only logical conclusion was therefore that Mrs. McAuley died from erysipelas—which the physicians said at the trial was a form of blood poisoning—caused by the germs of that disease entering her system through an abrasion of the skin of her leg, which she suffered in alighting from a street car.

It was contended by the casualty company, however, that this was not sufficient to fix a liability on it under its contract, for the reason that the disease germs might have been communicated to the hurt, not at the time of the accident, but from the hands of her husband, or from bandages or liniments which were immediately thereafter used and applied. But the court is of the opinion that this contention could not be sustained. These contracts of insurance, like all others, must be construed with a view to carrying out the intention of the parties. The manifest intention of these parties was that, if Mrs. McAuley was injured while riding as a passenger on a street car, the plaintiff beneficiary should be indemnified, to a certain extent, for his loss.

That the disease germs were communicated to Mrs. McAuley's leg from the hands of her husband, or from the bandages or liniment, was mere conjecture; there was no word of testimony on the subject. The jury found that she injured her leg at the time and place in question, and the proof showed that erysipelas manifested itself within the usual time. If a man not learned in the medical profession—one of the neighbors, for instance—were asked what caused Mrs. McAuley's death, he would undoubtedly reply that she scratched her leg getting off a street car, and that blood poisoning set in, from which she died. This is the way people generally understand these matters; and why should the courts adopt any other or different method of looking at the ordinary affairs of life? The injury and the erysipelas and the death were proven facts in the case. If Mrs. McAuley had not injured her leg in alighting from the car, there would have been no occasion to apply bandages or liniment, and the probabilities were she would still be alive. The defendant company induced the plaintiff to insure the life of his wife against accidental death; he paid the premium, and she thereafter died from the effects of an accidental injury. The court has no hesitancy in agreeing with the jury that the injury to her leg was the proximate cause of her death, and affirms a judgment for the plaintiff.

Current Medical Literature

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

November 6

1 Parasitism and Natural Selection. R. G. Eccles, Brooklyn.
2 *Acetone Treatment of Inoperable Carcinoma. D. W. Tovey, New York.
3 *Differential Diagnosis Between Certain Forms of Tertian Malaria and Enterogenic Intoxication. H. A. Houghton, Bayside, L. I.
4 *[illegible] A Symptom. J. N. LeConte, Altanta, Ga.
5 [illegible] M. Hellman, New York.
6 *[illegible] Antidiphtheritic Serum. F. M. Fernandez, Havana, Cuba.

2. Acetone Treatment of Inoperable Carcinoma.—Tovey reports eight cases of inoperable carcinoma treated with acetone as first used by Gellhorn. The patients had passed beyond the reach of any radical operation and in some cases the cancer had consumed the greater part of the cervix and vagina. The treatment, in a simple and harmless way, has given these patients a period of comparative ease and comfort. Tovey says that the treatment is of value only in inoperable cases, and does not give a permanent cure, but ameliorates the chief symptoms and makes the life of the patient endurable. The terrible odor, discharge, and hemorrhages are all relieved, and when they return the treatment can be given again without harm. The hemorrhages, septic absorption, and odor are all stopped.

3. Tertian Malaria and Enterogenic Intoxication.—According to Houghton many so-called cases of malaria of indefinite type are in reality cases of intestinal intoxication from non-digestion of foods, or the action of bacteria on digested but unassimilated foods.

4. Spastic Constipation.—According to LeConte, spastic constipation depends on a spastic contraction of the longitudinal and circular fibers of the intestinal wall, caused by inflammation or irritation. It is generally found in nervous, high-strung persons, especially women. The symptoms are attacks of sharp pain along the colon or radiating from the umbilicus, especially before the expulsion of gas or feces, dull aching pain in the intervals, and small scybalous or flattened stools, passed in two or three stools each day with much pain. Laxatives give much pain and act in large doses. Mucus in considerable quantity may be passed. Harsh, irritating foods, such as are used in the atonic variety, are harmful here. The diet should be bland and should consist of materials that can all be passed through a fine sieve. The condition is associated with mucous colitis in many cases.

6. Non-Specific Use of Antidiphtheritic Serum.—Fernandez advocates the use of antidiphtheritic serum in a number of non-diphtheritic diseases, in the nature of infections, either general or local. He has found it useful in suppurative keratitis of whatever origin, in infectious ulcers of the cornea, and penetrating wounds of the eye, in several respiratory affections, bronchopneumonia, and measles.

Boston Medical and Surgical Journal

November 4

7 Diagnosis of Renal Tuberculosis. A. L. Chute, Boston.
8 Renal Tuberculosis. Pathogenesis and Pathology. L. Davis, Boston.
9 Prognosis and Treatment of Renal Tuberculosis. R. F. O'Neil, Boston.

10 Difficulties of Diagnosis in Renal Tuberculosis. F. B. Lund, Boston.
11 Direct Transfusion of Blood. Comparison of Methods. J. C. Hubbard and A. R. Kimpton, Boston.

New York Medical Journal

November 6

12 Attic Suppurations. M. J. Ballin, New York.
13 Present Status of Vaccine Therapy. H. A. Duncan, Philadelphia.
14 Intramuscular Injections in Treatment of Syphilis. V. C. Pedersen, New York.
15 The Technic of Round Ligament Shortening Through the Internal Ring, Combined with Celeotomy. C. W. Barrett, Chicago.
16 Cholelithiasis Simulating Duodenal Ulcer. H. Weinstein and R. Cronson, New York.
17 Celsus on Diseases of the Stomach. C. G. Cumston, Boston.
18 The Fowler Position in Treatment of Peritonitis with Description of the Gorham Bed. G. Griffin, Albany, N. Y.
19 *Influence of Hydrogen Peroxid on Hydrochloric Acid Secretion. E. H. Goodman, Philadelphia.
20 A Foreign Body in the Urethra. J. H. Dowd, Buffalo, N. Y.

19. **Influence of Hydrogen Peroxid on Hydrochloric Acid.**—Goodman has repeated the experiments of Petri in fifteen patients. Fifty cubic centimeters of a 3 per cent. solution of peroxid of hydrogen were made up to 300 c.c. with water, making approximately a 0.5 per cent. solution. An ordinary Ewald test meal was given and examined in the usual manner and was later followed by the peroxid test meal. No difficulty was experienced in getting the patient to take the latter, and no unpleasant sensations were complained of, with the exception of one patient, who said the "water had a fishy taste." There was a striking diminution in the quantity of free hydrochloric acid when a weak solution of hydrogen peroxid was substituted for tea in a test meal. Occasionally only a moderate decrease was observed, but in the majority of cases the decrease was astonishing, in some instances a total absence of free acid being noted. Not one of these six patients in whom the free acid was lacking, complained of any unpleasant sensations however. Only one patient, a neurasthenic and sullen youth, offered any opposition to the peroxid on account of the taste. Therapeutic application of the facts learned from these studies was made in a few instances. For use in the ward, a 0.5 per cent. hydrogen peroxid solution was made up in bulk and under the name of special water, was given to certain patients. The first patient to receive this water was suffering from headaches and gastric fermentation, and while under observation there developed an array of diurnally varying pains and symptoms. Another patient had the usual symptoms of hyperchlorhydria and suffered a great deal at night with burning sensation in the epigastrium. This was so intense that he was usually wakened out of a sound sleep by the pain. Hydrogen peroxid quickly relieved the distress, and although he stated that the special water made him sick for the time being, he became accustomed to it and drank no other water during his stay in the hospital. He was discharged cured, no other medicine being used except peroxid.

Northwestern Lancet, Minneapolis

November 1

21 *Relation of the Medical Profession to the State. C. Williams. St. Paul.
22 Ulcer of the Stomach and Duodenum. A. T. Mann, Minneapolis.
23 The Empty Intestine Treatment of Typhoid Fever. A. D. Hard, Marshall, Minn.
24 Treatment of Postpartum Hemorrhage with Momberg's Rubber Tube. F. L. Adair, Minneapolis.

21. Abstracted in Report of Minnesota State Medical Association in Department of Society Proceedings in this issue.

Medical Fortnightly, St. Louis

October 25

25 Open Operative Treatment of Fracture of the Patella (continued). A. P. Heineck, Chicago.

American Journal of Medical Sciences, Philadelphia

November

26 *Intestinal Perforation During Typhoid in Children. J. H. Jopson and J. C. Gittings, Philadelphia.
27 General Movement of Typhoid Fever and Tuberculosis in the Last 30 Years. G. M. Kober, Washington, D. C.
28 *Experiments Relating to Bacterial Content of the Feces, with Researches on the Value of Certain [illegible] Antiseptics. J. Friedenwald and [illegible]
29 Case of Carcinoma on [illegible] H. Z. Giffin and L. B. Wilson, Rochester, Minn.
30 *Cervical Rib and Its Relation to Neuropathies. S. P. Goodhart, New York.
31 The Interpretation of Aphasia. F. X. Dercum, Philadelphia.
32 School Life: Its Relation to the Child's Development. T. M. Rotch, Boston.
33 *Compression of Pulmonary Veins, the Pressure Factor in the Etiology of Cardiac Hydrothorax. G. Fetterolf and H. R. M. Landis, Philadelphia.
34 A Practical Hospital Polygraph. T. B. Barringer, New York.
35 *Locomotor Ataxia and Paralysis Agitans in the Same Patient. A. A. Eshner, Philadelphia.
36 *Cerebral Tumor Presenting an Unusual Clinical Course. R. D. Rudolf and J. J. Mackenzie, Toronto.

26. **Intestinal Perforation During Typhoid in Children.**—Jopson and Gittings studied the cases of perforation in typhoid occurring in children, and reported since 1903, with a view to confirming, if possible, the findings of Elsberg, and, at the same time, to consider briefly those points in the clinical course of typhoid in children that have a bearing on the diagnosis of perforation and to compare these with the symptoms commonly observed in adults. They collected from various sources 2,274 cases of typhoid in children in which perforation occurred thirty-five times (1.54 per cent). In collecting cases of perforation in children for study they fixed the usual age limit of fifteen years; they analyzed only cases in which operation was performed and perforation proved; they did not consider cases of peritonitis occurring without perforation, nor did they study cases of perforation of the appendix in which this lesion was manifestly due to a preexisting or coincident appendicitis not due to typhoid ulceration. Reported since the publication of Elsberg's paper in 1903, are 45 cases in subjects 15 years of age and younger, the exact age being given in 44. The youngest (4) were aged 5; 2 recovered, and 2 died. There were 3 patients aged 15 years, all of whom died. Of 21 patients under 10 years, 12 recovered, 9 died, a mortality of 43 per cent.; of 23 patients 10 years of age or over, 10 recovered and 13 died, a mortality of 56.5 per cent. In 31 cases the type of the disease previous to perforation was mentioned; 8 were mild, 15 were moderate, and 8 were very severe. Of the mild cases, 5 patients recovered, 3 died in cases of moderate severity, 8 patients recovered, 7 died. In the very severe cases 2 patients recovered and 6 died. The influence of the severity of the attack on the prognosis in cases of perforation as shown by these figures seems to be considerable. The child who is toxic and exhausted by prolonged hyperpyrexia is in poor condition to resist the additional complication and operative intervention. In 44 cases the time of perforation was definitely stated. The danger of perforation is greatest at the end of the second and during the third week. Nine patients were in relapse at the time of perforation; in another, a probable relapse, the duration of the disease was not stated, thus making ten cases in all. The date of the perforation ranged from the seventh to the fifteenth day of the relapse. Of these patients, 6 recovered and 4 died, a percentage of recoveries higher than that observed in unrelapsed cases. In 87.5 per cent. (21 out of 24 cases) pain was an initial symptom; in one case it was mentioned as not being initial; in two other cases it had been present during the illness to such an extent as to constitute a difficulty in diagnosis. In 89 per cent. (25 out of 28) the pain was severe. In the remaining 11 per cent. it was stated to be not severe. In 58.6 per cent. (17 out of 29) the pain was general in distribution. In 24.1 per cent. (7 out of 29) it was confined to the right side of the abdomen, especially the right iliac region. In 10 per cent. (3 out of 29) it was noted in the left side. In one case it was noted in the "upper" and once in the "lower" abdomen. In 10 out of 17 the pain was persistent, in 4 of which it continued to increase in severity. In 3 out of 17 it was intermittent in type; and in 4 it was distinctly stated to be "not persistent." Tenderness was noted as being present in 36 out of 45 cases. It was recorded as "general" in 15; prominent in the right iliac fossa in 9; confined to the "lower abdomen" in 2; and once to the hypogastrium. Rigidity is almost invariably present. It was noted as being absent in only 1 of 32 cases of the series in which full data were given, and in 1 it was absent early but appeared later. In 26 cases. vomiting was present 20 times and absent 6. Of the 20 cases, it occurred as an initial symptom in 4. Distention was noted as being present in 19 cases and absent in 11. Distention was present in only 50 per cent. of the patients who recovered and in 91 per cent. of the patients who died. In sixteen cases the normal area of liver dulness was diminished or almost obliterated; 5 times this was noted in early cases. Effusion. as indicated by movable dulness in one or both flanks, was noted as being present in 8

cases. In 12, information as to the temperature was entirely wanting. Of 33 cases there were 15 in which the temperature was depressed at some time subsequent to perforation, and in 11 of these it was specified that there was an immediate drop. In 6 there was no change. In 5 there was a rise at the time of, or shortly after perforation; and in 7 the temperature was fairly high. In 33 per cent. of the cases was it specifically stated that there was a pronounced initial drop in temperature; so that it is probably absent in more than half the cases occurring in childhood. A chill at the time of perforation was recorded in 6 cases. In 34 cases more or less satisfactory observations on the pulse rate were furnished. The majority of cases in children, as in adults, show an increase in the rapidity of the pulse rate; and in a considerable number, a weakening in the quality of the pulse may be looked for as an accompaniment of intestinal perforation. Shock was distinctly stated to be a marked symptom in 10 out of 45 cases, the most prominent alteration being in pulse and facies, and sometimes temperature—a rapid increase in the first; a pinched, pale, anxious expression in the second, and a fall in temperature, being the concomitant features. In 3 cases in which there was no shock the facies showed no change. The study of the data on respiration was unsatisfactory. Leucocytic counts were recorded in only 14 cases, in 6 of these repeated observations were made. They suggest that a falling count is unfavorable, while a high count or a rapidly rising count is of better prognostic significance.

The important diagnostic symptoms which are shown by a study of these cases are: pain, tenderness, and rigidity, which in children, as in adults, are early in their development and fairly constant in appearance. Next in importance, because less frequent, but of significance when present, are a drop in temperature, a rise in the pulse rate, and some degree of shock, often preceded or accompanied by vomiting, with perhaps a preceding or accompanying chill. A wave of leucocytosis will sometimes be recorded, and is at least as significant, if not more so, than in adults. Distention and obliteration or diminution of liver dulness are of little value in making the diagnosis in children, while effusion is mainly of value in confirming it. Other points are an absence of abdominal respiration, inhibition of peristalsis, and possibly a rise of blood-pressure, hitherto unstudied, in early life. The accident of perforation may be simulated in children, as in adults, by a number of other conditions.

28. Bacterial Content of Feces.—According to the authors, regulations of diet, together with the evacuation of the bowels, is the most effectual method that they have at hand of reducing the excessively high bacterial content of the intestine. Betanaphthol and bismuth salicylate appear to be the most effectual intestinal antiseptic drugs in normal individuals, while the aspirin and ichthalbin effect slight reduction, and salol gives no results whatever. The results produced by means of intestinal antiseptics in patients suffering with gastrointestinal disturbances, do not seem to be marked, whereas the best results are obtained by regulation of diet.

30. Cervical Rib.—The salient points in the case presented by Goodhart are: 1. Onset of symptoms at an unusually early age (7 years). 2. Severity of symptoms, which are practically limited to the nervous system. 3. Hypesthesia in the region supplied by the inner cord of the brachial plexus (ulnar distribution). 4. Progressive atrophy of the small muscles of the hand, including the thenar and hypothenar eminences. 5. Cervico-dorsal scoliosis. 6. Stationary character of the symptoms referable to the cervical rib, in the absence of surgical intervention. 7. Demonstration of the exact location of the roots of the brachial plexus in their relation to the supernumerary rib on the left side; digital pressure on each producing numbness and tingling in corresponding area of arm. 8. Diminution in size of the third normal rib on the left side, well-shown in the radiogram. 9. Beginning symptoms due to pressure on the opposite side. 10. Surgical removal of both cervical ribs.

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35. Abstracted in The Journal, June 5, 1909, p. 1875.

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American Journal of Urology, New York

October

37 Total Enucleation of the Enlarged Prostate. P. J. Freyer, London, England.
38 Principles Underlying the Newer Methods in the *Diagnosis* of Kidney Disease. J. Robertson, London, England.
39 *Pyelonephritis of Pregnancy and the Puerperium.* C. G. Cumston, Boston.

Old Dominion Journal of Medicine and Surgery, Richmond

October

40 *[illegible] ar Nerve. A. Gordon, Philadelphia.
41 [illegible] and Nervous Syndromes. A. G. [illegible]
42 *[illegible] eatment of Goiter. Le G. Guerry, [illegible]
43 *Clinical Aspect [illegible] Tompkins, Richmond.
44 Nasal Pressure [illegible] of Apparently Ocular Origin. C. M [illegible]
45 Pharmacologic [illegible] on of Various Potent Remedies: Al [illegible] mond.
46 Foreign Bodies [illegible] in Body. B. C. Nalle, Charlotte, N. C.

40. Sleep Paralysis of Ulnar Nerve.—Gordon says that it is the traction or over-extension of the arm but not a prolonged postoperative lying position that is apt to produce an ulnar paralysis. If the latter were the real factor, ulnar palsies would be encountered very frequently, which is of course not the case. The ulnar palsy under the circumstances is probably the result of stretching of the nerve in its upper portion near the axilla. In sleep a similar phenomenon may be observed when an individual sleeps with the arms elevated, abducted, and behind the head. If the sleep lasts a long time the over-extension of the arm, and consequently of the nerve, is sufficient to interfere with the function of the nerve. Whatever the mechanism of ulnar neuritis in such circumstances may be, ulnar neuritis occurring during sleep is an infrequent phenomenon. As to the nature of the affection, all that can be said is: the normal function of the nerve has been interrupted; the over-extension of the nerve has brought on some molecular displacement which was sufficient to interfere with the proper conduction of stimuli through that nerve in a centripetal or centrifugal direction. Over-extension of a nerve is apt to tear its fibrils and its blood-vessels, and thus produce hemorrhages and inflammation. That an inflammatory state is not present is evident from total absence of pain at any stage of the disease and from the rapid improvement that follows treatment. This consists only of daily massage and of strict precautions against over-extension of the limb not only at night but also during the day.

42, 43. Abstracted in The Journal, Oct. 23, 1909, p. 1421.

Ophthalmic Record, Chicago

October

47 Injuries from Foreign Bodies Examined by the Roentgen Rays. with Results of Operation. W. M. Sweet, Philadelphia.
48 Instruments for Opening from the Lachrymal Sac Directly to the Nasal Cavity. H. Gifford, Omaha, Neb.
49 *Rapid Method of Staining the Trachoma Bodies of Halberstaedter and Prowazek. F. H. Verhoeff, Cambridge, Mass.
50 *A New Law. J. H. Rhoads, Philadelphia.
51 Blood Pressure in its Practical Relations to Ophthalmology. E. Jackson, Denver, Colo.

49. **Rapid Method of Staining Trachoma Bodies.**—Verhoeff uses Wright's well-known modification of Leishman's stain with satisfactory results. The stain is applied in exactly the same manner as in the staining of the blood films. The specimen is conveniently obtained by scraping the cocainized conjunctiva with one edge of a cover glass instead of a knife, and by making use of the tears as a diluent instead of a salt solution as generally advised. If desired, the cover glass may be previously sterilized by flaming it. The tears and scrapings collected along the edge of the cover glass are then gently spread over the surface of another cover glass and allowed to dry in the air. The preparation is then flooded with the staining fluid which is allowed to act one minute. Distilled water is then added, about 8 drops, until a slight scum is formed on the surface of the mixture, which is allowed to remain three or four minutes. The preparation is then differentiated by washing off the staining mixture with distilled water and allowing the water to act about one minute. The differentiation may be followed by placing the cover glass film side up on a slide and watching the process under a low power of the microscope. The preparation is then quickly dried with fine filter paper and mounted in balsam.

50. **A New Law.**—This new law, discovered by Rhoads, is: The angle of refraction is the law of the perspective. All parallel lines are seen to approach each other at a one-minute angle. This angle controls all vanishing points, and all lines and planes; in fact, the size of all objects and the angle of all lines, whether large or small, broken, crooked, curved or straight. And, moreover, it matters not whether they are viewed downward from a balloon, upward from a coal mine, or outward from an observer at any conceivable incline. The horizon has nothing whatever to do with the vanishing of any lines or objects, unless they happen to be nine feet apart when they leave the observer. The angle within which the human eye cannot see is conceded to be one minute—the average may be a little less, not greater—therefore, the eye separating two cobwebs at twelve inches from it would place them at 3/1000 of an inch apart. At ten feet from the eye the angle would be 30/1000 of an inch wide. At three-quarters of a mile the angle would be twelve inches apart, while at three and a half miles it will be separated five feet two inches, which is just wide enough to admit a trolley track. This angle continued to the horizon would gap about nine feet. Prolong this angle over the edge of the horizon to the half-risen moon and objects would have to be seventy miles apart on the face of the moon to be visible to the unaided eye, and continuing this angle on to the sun, spots on the disc of the sun, viewed through a smoked glass, by the naked eye, must be over 27,000 miles in extent to come within, or rather without this angle, to be seen by the human eye. To project these lines on to the nearest measured star, which requires three years for its light to reach us, and they would be wide open to the extent of 42,000,000,000 miles, and double stars would have to be placed at the extreme corners of this vast isosceles triangle, or they would be blended into a single star. Rhoads believes that each pair of parallel lines in perspective is an isosceles triangle, and the length of its sides is governed by the width of its base; especially is this true if they are less than nine feet apart when they meet between the observer and the horizon. If they are wider than nine feet they gap on the horizon.

Parallel lines four inches apart would come together at 1,320 feet, only on twenty-sixth of the distance to the horizon. Parallel lines one foot apart come together at three-quarters of a mile, less than one-sixth distance to the horizon, and parallel lines two feet apart come together at a mile and a half from the observer. While lines nine feet apart come together on the horizon, all lines wider than nine feet, if on a level plane, gap at the horizon, but if they go up a mountain side or off into the air they meet where the one-minute angle brings them together, *i. e.*, where the human eye can no longer separate them.

Journal of Cutaneous Diseases, New York

October

52 Increase of Certain Contagions Following the Great Fire in San Francisco. D. W. Montgomery and H. Morrow, San Francisco.
53 Acute Septic Pemphigus. J. Grindon, St. Louis.
54 Bromid Eruption Mistaken for Blastomycosis. O. S. Ormsby, Chicago.

Mississippi Medical Monthly, Vicksburg

November

55 Diagnosis and Treatment of Acute Intestinal Obstruction. J. W. Armstead, Sidon.
56 Carbon Dioxid Snow: Its Uses and Method of Application. J. H. Fox, Vicksburg.
57 *Congenital Umbilical Hernia into the Cord. C. E. Catchings, Woodville.
58 Hookworm Disease or Uncinariasis. B. Z. Welsh, Wool Market.
59 Hystero-Salpingo-Oöphorectomy Duplex for Fibroids. W. R. McKinley, Columbus.

57. **Congenital Umbilical Hernia into Cord.**—In the case reported by Catchings the cord was greatly distended at its point of insertion into the abdomen forming a tumor about two and one-half inches in diameter, and about three and one-half inches long. One side or half of this tumor was opaque, while from the other side the contents could be partly determined through the hernial coverings, owing to the thinness of the layers. It was a case of congenital hernia into the cord. Manipulation to reduce the contents was of no avail. The hernia was reduced by operative means. The contents of the hernia were cecum and appendix, a portion of the ileum and some omentum, all firmly adhered to the opaque side of the tumor. The infant recovered.

Journal of Abnormal Psychology, Boston

October

60 Case of Psychochromesthesia. T. H. Raines, Savannah, Ga.
61 Psychology of General Paresis. A. Schmiergeld, Ward's Island, N. Y.
62 Certain Pulse Reactions as a Measure of Emotions. I. H. Coriat, Boston.

Detroit Medical Journal

October

63 *General Anesthesia in 5,400 Patients. A. V. Wenger, Grand Rapids, Mich.
64 Appendicitis in Children. G. Van A. Brown, Detroit.

63. **General Anesthesia.**—Five thousand, four hundred anesthesias with no fatalities is the experience recorded by Wenger. He urges that patients be prepared more thoroughly than is the general rule. Eliminate, so far as possible, the moving of patients after partial or complete anesthesia. When ether or chloroform are the drugs to be administered, use the

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38 Principles Underlying the Newer Methods in the Diagnosis of Kidney Disease. J. Robertson, London, England.
39 Pyelonephritis of Pregnancy and the Puerperium. C. G. Cumston, Boston.

Old Dominion Journal of Medicine and Surgery, Richmond

October

40 *Sleep Paralysis of the Ulnar Nerve. A. Gordon, Philadelphia.
41 Associated Cardiovascular and Nervous Syndromes. A. G. Brown, Richmond.
42 *Present Status of the *Treatment* of Goiter. Le G. Guerry, Columbia, S. C.
43 *Clinical Aspe[illegible] Tompkins, Richmond.
44 Nasal Pressu[illegible] of Apparently Ocular Origin. C. [illegible]
45 Pharmacologi[illegible] on of Various Potent Remedies: [illegible] mond.
46 Foreign Bodie[illegible] in Body. B. C. Nalle, Charlotte, N. C.

40. **Sleep Paralysis of Ulnar Nerve.**—Gordon says that it is the traction or over-extension of the arm but not a prolonged

postoperative lying position that is apt to produce an ulnar paralysis. If the latter were the real factor, ulnar palsies would be encountered very frequently, which is of course not the case. The ulnar palsy under the circumstances is probably the result of stretching of the nerve in its upper portion near the axilla. In sleep a similar phenomenon may be observed when an individual sleeps with the arms elevated, abducted, and behind the head. If the sleep lasts a long time the over-extension of the arm, and consequently of the nerve, is sufficient to interfere with the function of the nerve. Whatever the mechanism of ulnar neuritis in such circumstances may be, ulnar neuritis occurring during sleep is an infrequent phenomenon. As to the nature of the affection, all that can be said is: the normal function of the nerve has been interrupted; the over-extension of the nerve has brought on some molecular displacement which was sufficient to interfere with the proper conduction of stimuli through that nerve in a centripetal or centrifugal direction. Over-extension of a nerve is apt to tear its fibrils and its blood-vessels, and thus produce hemorrhages and inflammation. That an inflammatory state is not present is evident from total absence of pain at any stage of the disease and from the rapid improvement that follows treatment. This consists only of daily massage and of strict precautions against over-extension of the limb not only at night but also during the day.

42, 43. Abstracted in THE JOURNAL, Oct. 23, 1909, p. 1421.

Ophthalmic Record, Chicago

October

47 Injuries from Foreign Bodies Examined by the Roentgen Rays, with Results of Operation. W. M. Sweet, Philadelphia.
48 Instruments for Opening from the Lachrymal Sac Directly to the Nasal Cavity. H. Gifford, Omaha, Neb.
49 *Rapid Method of Stainir [illegible] Halberstaedter and Prowazek. F [illegible] Mass.
50 *A New Law. J. H. Rh [illegible]
51 Blood Pressure in its [illegible] ophthalmology. E. Jackson, Denver, Colo.

49. **Rapid Method of Staining Trachoma Bodies.**—Verhoeff uses Wright's well-known modification of Leishman's stain with satisfactory results. The stain is applied in exactly the same manner as in the staining of the blood films. The specimen is conveniently obtained by scraping the cocainized conjunctiva with one edge of a cover glass instead of a knife, and by making use of the tears as a diluent instead of a salt solution as generally advised. If desired, the cover glass may be previously sterilized by flaming it. The tears and scrapings collected along the edge of the cover glass are then gently spread over the surface of another cover glass and allowed to dry in the air. The preparation is then flooded with the staining fluid which is allowed to act one minute. Distilled water is then added, about 8 drops, until a slight scum is formed on the surface of the mixture, which is allowed to remain three or four minutes. The preparation is then differentiated by washing off the staining mixture with distilled water and allowing the water to act about one minute. The differentiation may be followed by placing the cover glass film side up on a slide and watching the process under a low power of the microscope. The preparation is then quickly dried with fine filter paper and mounted in balsam.

50. **A New Law.**—This new law, discovered by Rhoads, is: The angle of refraction is the law of the perspective. All parallel lines are seen to approach each other at a one-minute angle. This angle controls all vanishing points, and all lines and planes; in fact, the size of all objects and the angle of all lines, whether large or small, broken, crooked, curved or straight. And, moreover, it matters not whether they are viewed downward from a balloon, upward from a coal mine, or outward from an observer at any conceivable incline. The horizon has nothing whatever to do with the vanishing of any lines or objects, unless they happen to be nine feet apart when they leave the observer. The angle within which the human eye cannot see is conceded to be one minute—the average may be a little less, not greater—therefore, the eye separating two cobwebs at twelve inches from it would place them at 3/1000 of an inch apart. At ten feet from the eye the angle would be 30/1000 of an inch wide. At three-quarters of a mile the angle would be twelve inches apart, while at three and a half miles it will be separated five feet two inches, which is just wide enough to admit a trolley track. This angle continued to the horizon would gap about nine feet. Prolong this angle over the edge of the horizon to the half-risen moon and objects would have to be seventy miles apart on the face of the moon to be visible to the unaided eye, and continuing this angle on to the sun, spots on the disc of the sun, viewed through a smoked glass, by the naked eye, must be over 27,000 miles in extent to come within, or rather without this angle, to be seen by the human eye. To project these lines on to the nearest measured star, which requires three years for its light to reach us, and they would be wide open to the extent of 42,000,000,000 miles, and double stars would have to be placed at the extreme corners of this vast isosceles triangle, or they would be blended into a single star. Rhoads believes that each pair of parallel lines in perspective is an isosceles triangle, and the length of its sides is governed by the width of its base; especially is this true if they are less than nine feet apart when they meet between the observer and the horizon. If they are wider than nine feet they gap on the horizon.

Parallel lines four inches apart would come together at 1,320 feet, only on twenty-sixth of the distance to the horizon. Parallel lines one foot apart come together at three-quarters of a mile, less than one-sixth distance to the horizon, and parallel lines two feet apart come together at a mile and a half from the observer. While lines nine feet apart come together on the horizon, all lines wider than nine feet, if on a level plane, gap at the horizon, but if they go up a mountain side or off into the air they meet where the one-minute angle brings them together, *i. e.*, where the human eye can no longer separate them.

Journal of Cutaneous Diseases, New York

October

52 Increase of Certain Contagions Following the Great Fire in San Francisco. D. W. Montgomery and H. Morrow, San Francisco.
53 Acute Septic Pemphigus. J. Grindon, St. Louis.
54 Bromid Eruption Mistaken for Blastomycosis. O. S. Ormsby, Chicago.

Mississippi Medical Monthly, Vicksburg

November

55 Diagnosis and Treatment of Acute Intestinal Obstruction. J. W. Armstead, Sidon.
56 Carbon Dioxid Snow: Its Uses and Method of Application. J. H. Fox, Vicksburg.
57 *Congenital Umbilical Hernia into the Cord. C. E. Catchings, Woodville.
58 Hookworm Disease or Uncinariasis. B. Z. Welsh, Wool Market.
59 Hystero-Salpingo-Oöphorectomy Duplex for Fibroids. W. R. McKinley, Columbus.

57. **Congenital Umbilical Hernia into Cord.**—In the case reported by Catchings the cord was greatly distended at its point of insertion into the abdomen forming a tumor about two and one-half inches in diameter, and about three and one-half inches long. One side or half of this tumor was opaque, while from the other side the contents could be partly determined through the hernial coverings, owing to the thinness of the layers. It was a case of congenital hernia into the cord. Manipulation to reduce the contents was of no avail. The hernia was reduced by operative means. The contents of the hernia were cecum and appendix, a portion of the ileum and some omentum, all firmly adhered to the opaque side of the tumor. The infant recovered.

Journal of Abnormal Psychology, Boston

October

60 Case of Psychochromesthesia. T. H. Raines, Savannah, Ga.
61 Psychology of General Paresis. A. Schmiergeld, Ward's Island, N. Y.
62 Certain Pulse Reactions as a Measure of Emotions. I. H. Coriat, Boston.

Detroit Medical Journal

October

63 *General Anesthesia in 5,400 Patients. A. V. Wenger, Grand Rapids, Mich.
64 Appendicitis in Children. G. Van A. Brown, Detroit.

63. **General Anesthesia.**—Five thousand, four hundred anesthesias with no fatalities is the experience recorded by Wenger. He urges that patients be prepared more thoroughly than is the general rule. Eliminate, so far as possible, the moving of patients after partial or complete anesthesia. When ether or chloroform are the drugs to be administered, use the

open method, drop by drop, so that elimination may progress in a comparative ratio to absorption. Except when contraindicated, give morphin from 1/8 to 1/4 of a grain, and atropin from 1/200 to 1/100 of a grain, hypodermically, from 15 to 45 minutes before anesthesia is begun, for the purpose of reducing the amount of drug and controlling mucus secretion. Keep the mouth clear of the mucus that is secreted, which, when laden with ether or chloroform and swallowed, is the most frequent cause of postoperative vomiting. If this is well looked after the frequency of vomiting will be much reduced. Always have a hypodermic syringe charged with at least 1/20 grain of strychnin and 1/100 of a grain of digitalin, and whenever possible, a second hypodermic charged with atropin 1/75 of a grain at hand. When anesthetizing the center of attention should be the business in hand, not the operation. Give only enough attention to the operation to guide in the degree of anesthesia. Be careful and gentle with the eyes. Keep in mind the fact that pupilary reflex and conjunctival reflex from drug vapor are sufficient guides and that they are fully as accurate as the reflex obtained by the finger touching the conjunctiva or cornea. Begin all anesthesias with ether or chloroform slowly, carefully watching the color of the patient and the condition of the pulse, respiration and skin. If the patient is markedly cyanosed it will often be found that a change from ether to chloroform or *vice versa* will relieve the condition. In tedious operations the patients should receive an infusion of saline solution, from one-half to three pints, according to indication. Always examine urine, heart, lungs and mouth, and always ascertain that all clothing is loose about the patient's body and neck.

Annals of Ophthalmology, St. Louis

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Southern Medical Journal, Nashville

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81 Treatment of Cancer of the Skin. J. M. King, Nashville.
82 Inguinal Hernia and its Successful Cure by Operation with Local Anesthesia. W. W. Battey, Augusta, Ga.
83 Maxillary Sinus Disease and its Surgical Treatment. M. M. Cullom, Nashville.
84 Uncinariasis. C. P. McNabb, Knoxville, Tenn.
85 *Diagnosis of Syphilis by the Wassermann Reaction. W. Litterer, Nashville.
86 Treatment of Tuberculous Peritonitis. W. A. Bryan, Nashville.
87 Gonorrhea and the Public Health. T. Frazer, Asheville, N. C.
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98 History of the Wyoming Medical Society for the Past Six Years. G. L. Strader, Cheyenne, Wyo.

University of Pennsylvania Medical Bulletin, Philadelphia

October

99 *Compression of the Superior Mesenteric Artery on the Systemic Blood Pressure. W. T. Longcope and A. T. McClintock, Philadelphia.
100 Development of Public Health Work in Philadelphia. A. C. Abbott, Philadelphia.
101 Practical Considerations on the Sinus Maxillaris. J. P. Schaeffer, Ithaca, N. Y.
102 Opportunities for the Practice of Sanitary Science. H. B. Wood, Philadelphia.
103 Some Fermentative Properties of Bacteria. D. H. Bergey, Philadelphia.
104 Anomalous Origin and Distribution of the Coronary Arteries. G. Fetterolf, Philadelphia.

99. **Compression of Superior Mesenteric Artery.**—It is evident from the physiologic experiments performed by Longcope and McClintock that constriction and ligation of the superior mesenteric artery will bring about immediately a slight but definite rise in blood-pressure, which is sustained over a short period of time, and so far as can be learned it is not possible to produce this same result by compression of any other branch of the aorta below the diaphragm. Two explanations are offered. The superior mesenteric artery supplies a relatively large area of the body, and the effect of constriction may be analogous to that resulting from compression of the aorta at the diaphragm. By obstructing the vessels a considerable proportion of the peripheral circulation is cut out, the peripheral resistance is increased, and the pressure, therefore, rises. Another explanation is, however, possible. Following complete ligation of the vessel there is, of course, marked anemia of the entire small intestine. This sudden anemia may induce, through a reflex action, an elevation of blood-pressure.

Colorado Medicine, Denver

October

105 The Progress of Medicine. P. J. McHugh, Estes Park, *Colo.*

Medical Herald, St. Joseph

October

106 A Study in Reflexes. L. M. Crafts, Minneapolis.
107 Acute Pancreatitis. D. S. Fairchild, Des Moines.
108 High Potential Currents and Low Frequencies. I. C. Barnes, Topeka, Kan.
109 Presentation of Case Three Years After Ligation of Common *Femoral Artery for Large Aneurism in* Scarpa's Triangle: Cure. L. J. Dandurant, St. Joseph, Mo.

Bulletin Johns Hopkins Hospital, Baltimore

November

110 The Two Sylviuses. F. Baker, Washington, D. C.
111 The Epidemic of the Indians of New England, 1616-1620. H. U. Williams, Buffalo, N. Y.
112 *Use of Silver Wire in Opening the Kidney. E. K. Cullen and H. F. Derge, Baltimore.

112. **Silver Wire in Opening Kidney.**—In man and dog there are, as a rule, two main arterial trunks supplying the kidney, one passing to the anterior, the other to the posterior portion. While studying the tree-like branching of these arterial trunks, the thought occurred to Cullen and Derge: Could it be possible to open the kidney in such a manner as to avoid the two main trunks, and, at the same time, do as little damage as possible to the finer branches. Anatomically, the proper procedure in performing a nephrotomy would be to cut from within outward, and some blunt instrument which would push the vessels aside would probably give the most satisfactory results. In order to determine the feasibility of this supposition, a series of nephrotomies was performed on dogs, and the results obtained were very definite and gratifying. A No. 3 silver wire was used as the blunt instrument, and proved very satisfactory, its pliability and low tensile strength making it almost impossible to tear any of the larger branches, providing ordinary care was exercised in pulling the wire slowly outward. Two series of experiments were performed to

determine, first, whether the direction of the incision had any appreciable effect on the resulting hemorrhage; that is, whether the hemorrhage would be less if the knife were passed from the region of the kidney pelvis out through the cortex and capsule, than from the capsule into the pelvis; secondly, whether the hemorrhage would be lessened and more readily controlled if a silver wire were used in lieu of the knife in splitting the kidney from within outward. In the first series of experiments, in which the knife alone was used, all the incisions were made in a plane at right angles to the curved vertical axis of the kidney. Two incisions were made in each experiment, one by passing the knife from cortex to pelvis, and the other by transfixing the kidney in antero-posterior manner close to the pelvis, and bringing the knife out through the cortex. Both of these incisions were made at a level of about 2 cm. from either pole and carried through the center of the lobule situated between the central and upper or lower polar lobule. In each instance, irrespective of whether the incision from pelvis to cortex was placed near the upper or lower pole, the hemorrhage was appreciably less when the knife was directed from pelvis to cortex than from cortex to pelvis. In the second series of experiments, both the knife and silver wire were used, and the experiments divided into two separate groups:

In the first group, the knife was used in making the incision near one pole and the silver wire near the other pole. The silver wire was usually employed first. A No. 3 or No. 4 silver wire threaded on a Kousnietzoff-Cullen straight liver needle was passed transversely through the kidney at the upper level of the pelvis. The capsule was then nicked with a knife from the point of entrance of the wire around to the point of exit. This procedure was found necessary to avoid trouble—some bleeding from the tearing of the capsule. With the kidney firmly held in the hand of the assistant, the wire was readily brought out through the cortex by a gentle see-saw motion. On examination, the cut surfaces appeared almost as clean-cut as if the knife had been used. In several instances bleeding, which was only a slight venous ooze, was so slight that a mere approximation of the two surfaces checked all bleeding, and had it been possible to keep the surfaces pressed closely together the kidney could have been safely dropped back into position without a single suture being necessary.

Alabama Medical Journal, Birmingham

October

113 Tetanus. S. G. Stubbins, Birmingham.
114 Present Theories Concerning Internal Secretion. H. Swedlow, Birmingham.
115 Ophthalmic Signs in Arteriosclerosis. B. D. Sibley, Birmingham.
116 Management of the Growing Girl. E. H. Sholl, Birmingham.
117 Non-Operative Gynecologic Methods. L. A. Jenkins, North Birmingham.

Journal of Nervous and Mental Disease, Lancaster, Pa.

November

118 Tumor of Hypophysis Cerebri. D. O. Hecht, Chicago.
119 Angiosarcoma of the Left Hemisphere. C. E. Riggs, St. Paul, Minn.
120 *Care of the Insane Epileptic. C. T. La Moure, Rochester, N. Y.

120. **Care of Insane Epileptics.**—La Moure advocates the establishment of a separate state hospital for the care and treatment of the so-called insane epileptics and the transfer of all epileptics from other state hospitals to such state hospitals for epileptics. With such arrangement many of the difficulties existing at present will, he thinks, be obviated. Beyond constituting a sufficient population to establish a large institution devoted to the solution of these problems, it is further pointed out that if this class were removed from present surroundings the vacancies thus created would provide room for an equal number of a non-epileptic class, thus tending to relieve the over-crowding which now exists.

Laryngoscope, St. Louis

October

121 Nasal and Nasopharyngeal Conditions as Causative Factors in Aural Disease. G. A. Leland, Boston.
122 Idem. N. H. Pierce, Chicago.
123 Idem. D. B. Kyle, Philadelphia.
124 Surgery of the Esophagus, Laryngologically Considered. C. Jackson, Pittsburg.
125 Three Esophageal Cases. H. P. Mosher, Boston.
126 Space and Time as Aural Concepts. P. Fridenberg, New York.
127 Elongated Styloid Process. C. W. Richardson, Washington, D. C.
128 Progress in the Surgical Treatment of Chronic Stenosis of the Larynx and Trachoma. J. R. Winslow, Baltimore.
129 The Telephone Therapy. J. G. Wilson, Chicago.
130 Direct Intubation of the Larynx. H. P. Mosher, Boston.
131 Acute Attic Suppuration with Hernia of the Drumhead Leading to Transient Labyrinthitis. H. Gradle, Chicago.

Journal of the Tennessee State Medical Association, Nashville

October

132 *Indications for Surgical Intervention in Peptic Ulcer—Choice of Operation. J. A. Gaines, Nashville.
133 *Rational Drug Therapy. E. R. Zemp, Knoxville.
134 *Lung Puncture as a Therapeutic Measure. T. J. Coble, Shelbyville.
135 Perineal Prostatectomy. G. B. Livermore, Memphis.
136 Definite Terms in Diseases of the Stomach. E. H. Jones, Murfreesboro.
137 A Word from the Druggists. H. C. Shapard, Shelbyville.
138 Cancer of the Stomach: Pylorectomy. B. B. Cates, Knoxville.
139 Eczema of Infancy and Childhood. J. Clear, Clinton.
140 Episcleritis, Treatment. G. H. Price, Nashville.

132, 133, 134. Abstracted in The Journal, May 1, 1909, p. 1452.

Journal of Ophthalmology and Oto-Laryngology, Chicago

October

141 Surgical Correction of Deformities of the Nasal Septum. E. Pynchon, Chicago.
142 Historical Review of the Development of the Cataract Operation. L. Stricker, Cincinnati.

Journal Arkansas Medical Society, Little Rock

October

143 Polypharmacy and Therapeutics; Then and Now. L. P. Gibson, Little Rock.
144 Acute Dilatation of the Stomach and Duodenum. C. H. Cargile, Bentonville.

Journal of Advanced Therapeutics, New York

October

145 Standardization of High Potential Electric Currents. E. C. Titus, New York.
146 Sciatica. F. B. Granger, Boston.
147 The Correction of Flat-Foot (continued). H. McIntosh, Boston.
148 Cases Treated by Static Electricity. A. B. Condict, Delhi, India.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

October 23

1. Experimental Psychology and Hypnotism. G. H. Savage.
2 *Cancer Research. H. C. Ross and C. Macalister.
3 *The Diagnosis of Malignant Disease by the Antitryptic Index. H. W. Bayly.
4 *Investigation of Serratus Magnus Infection in Cancer of the Breast. T. B. Henderson.
5 Cancer in New Zealand. P. W. Hislop and P. C. Fenwick.
6 *Rodent Ulcer Treated by Potassium Bichromate. W. Gemmill.
7 *Ascites Due to Liver Cirrhosis Treated by Operation. G. G. Turner.
8 Primary Carcinoma of the Appendix. D. M. Greig.

2. **Cancer Research.**—Ross and Macalister place on record some facts regarding a chemical substance which causes a remarkable train of events when it is absorbed by human lymphocytes in that it promotes, first, excitation of ameboid movement, then reproduction, and lastly, it causes death. These events are closely related to each other, and follow in quick succession under experimental conditions. More than a year ago they noted that there appears actually to exist in the body-fluids of persons suffering from carcinoma a substance which causes the first of these events in the chain—namely, the excitation of ameboid movements. A mixture of methylene blue and atropin excites ameboid movements in leucocytes. So does the blood of a cancer patient. The same mixture will cause lymphocytes to extrude flagella with a particle of chromatin at their ends; so will the plasma of a cancer patient. Ross and Macalister have shown that an extrusion of chromatin also appears to be a phenomenon which occurs in cancer cells, and that cancer cells appear to produce "something" which aggravates the disease. It is possible, they say, that this "something" is chromatin, and in support of this theory is the fact that an extract which probably contains chromatin or a derivative of it accelerates the action of the artificial auxetic. The deduction is that this chromatin thrown out by the cancer cells may be the element which, by affecting some other unknown substance, may promote a repetition of the changes which cause the three events in the chain to which they have referred.

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82 [illegible] Successful Cure by Operation with [illegible] W. Battey, Augusta, Ga.
83 [illegible] and its Surgical Treatment. M. M. [illegible]
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85 [illegible] the Wassermann Reaction. W. Lit- [illegible]
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101 Practical Considerations *on the* Sinus *Maxillaris.* J. P. Schaeffer, Ithaca, N. Y.
102 Opportunities for the Practice of Sanitary Science. H. B. Wood, Philadelphia.
103 Some Fermentative Properties *of* Bacteria. D. H. Bergey, [illegible]
104 [illegible] ibution of the Coronary Arteries.

99. **Compression of Superior Mesenteric Artery.**—It is evident from the physiologic experiments performed by Longcope and McClintock *that constriction and ligation of the superior* mesenteric artery will bring about immediately a slight but definite rise in blood-pressure, which is sustained over a short period of time, and so far as can be learned it is not possible to produce this same result by compression of any other branch of the aorta below the diaphragm. Two explanations are offered. The superior mesenteric artery supplies a relatively large area of the body, and the effect of constriction *may be analogous to that resulting from compression of the* aorta at the diaphragm. By obstructing the vessels a considerable proportion of the peripheral circulation is cut out, the peripheral resistance is increased, and the pressure, therefore, rises. Another explanation is, however, possible. Following complete ligation of the vessel there is, of course, marked anemia of the entire small intestine. This sudden anemia may induce, through a reflex action, an elevation of blood-pressure.

Colorado Medicine, Denver

October

105 The Progress of Medicine. P. J. McHugh, *Estes Park, Colo.*

Medical Herald, St. Joseph

October

106 A Study in Reflexes. L. M. Crafts, Minneapolis.
107 Acute Pancreatitis. D. S. Fairchild, Des Moines.
108 High Potential Currents and Low Frequencies. I. C. Barnes, Topeka, Kan.
109 Presentation of Case Three Years After Ligation of Common Femoral Artery for Large Aneurism in Scarpa's Triangle: Cure. L. J. Dandurant, St. Joseph, Mo.

Bulletin Johns Hopkins Hospital, Baltimore

November

110 The Two Sylviuses. F. Baker, Washington, D. C.
111 The Epidemic of the Indians of New England, 1616-1620. H. U. Williams, Buffalo, N. Y.
112 *Use of Silver Wire in Opening the Kidney. E. K. Cullen and H. F. Derge, Baltimore.

112. **Silver Wire in Opening Kidney.**—In man and dog there are, as a rule, two main arterial trunks supplying the kidney, one passing to the anterior, the other to the posterior portion. While studying the tree-like branching of these arterial trunks, the thought occurred to Cullen and Derge: Could it be possible to open the kidney in such a manner as to avoid *the two main trunks,* and, at the same time, do as little damage as possible to the finer branches. Anatomically, the proper procedure in performing a nephrotomy would be to cut from within outward, and some *blunt instrument* which would push the vessels aside would probably give the most satisfactory results. In order to determine the feasibility of this supposition, a series of nephrotomies was performed on *dogs,* an the results obtained were very definite and gratifying. A N 3 silver wire was used as the blunt instrument, and prove very satisfactory, its pliability and low tensile strength *mal* ing it almost impossible to tear any of the larger branche providing ordinary care was exercised in pulling the wi slowly outward. Two series of experiments were performed

determine, first, whether the direction of the incision had any appreciable effect on the resulting hemorrhage; that is, whether the hemorrhage would be less if the knife were passed from the region of the kidney pelvis out through the cortex and capsule, than from the capsule into the pelvis; secondly, whether the hemorrhage would be lessened and more readily controlled if a silver wire were used in lieu of the knife in splitting the kidney from within outward. In the first series of experiments, in which the knife alone was used, all the incisions were made in a plane at right angles to the curved vertical axis of the kidney. Two incisions were made in each experiment, one by passing the knife from cortex to pelvis, and the other by transfixing the kidney in antero-posterior manner close to the pelvis, and bringing the knife out through the cortex. Both of these incisions were made at a level of about 2 cm. from either pole and carried through the center of the lobule situated between the central and upper or lower polar lobule. In each instance, irrespective of whether the incision from pelvis to cortex was placed near the upper or lower pole, the hemorrhage was appreciably less when the knife was directed from pelvis to cortex than from cortex to pelvis. In the second series of experiments, both the knife and silver wire were used, and the experiments divided into two separate groups:

In the first group, the knife was used in making the incision near one pole and the silver wire near the other pole. The silver wire was usually employed first. A No. 3 or No. 4 silver wire threaded on a Kousnietzoff-Cullen straight liver needle was passed transversely through the kidney at the upper level of the pelvis. The capsule was then nicked with a knife from the point of entrance of the wire around to the point of exit. This procedure was found necessary to avoid trouble—some bleeding from the tearing of the capsule. With the kidney firmly held in the hand of the assistant, the wire was readily brought out through the cortex by a gentle see-saw motion. On examination, the cut surfaces appeared almost as clean-cut as if the knife had been used. In several instances bleeding, which was only a slight venous ooze, was so slight that a mere approximation of the two surfaces checked all bleeding, and had it been possible to keep the surfaces pressed closely together the kidney could have been safely dropped back into position without a single suture being necessary.

Alabama Medical Journal, Birmingham

October

113 Tetanus. S. G. Stubbins, Birmingham.
114 Present Theories Concerning Internal Secretion. H. Swedlow, Birmingham.
115 Ophthalmic Signs in Arteriosclerosis. B. D. Sibley, Birmingham.
116 Management of the Growing Girl. E. H. Sholl, Birmingham.
117 Non-Operative Gynecologic Methods. L. A. Jenkins, North Birmingham.

Journal of Nervous and Mental Disease, Lancaster, Pa.

November

118 Tumor of Hypophysis Cerebri. D. O. Hecht, Chicago.
119 *Angiosarcoma of the Left Hemisphere.* C. E. Riggs, St. Paul, Minn.
120 *Care of the Insane Epileptic. C. T. La Moure, Rochester, N. Y.

120. **Care of Insane Epileptics.**—La Moure advocates the establishment of a separate state hospital for the care and treatment of the so-called insane epileptics and the transfer of all epileptics from other state hospitals to such state hospitals for epileptics. With such arrangement many of the difficulties existing at present will, he thinks, be obviated. Beyond constituting a sufficient population to establish a large institution devoted to the solution of these problems, it is further pointed out that if this class were removed from present surroundings the vacancies thus created would provide room for an equal number of a non-epileptic class, thus tending to relieve the over-crowding which now exists.

Laryngoscope, St. Louis

October

121 Nasal and Nasopharyngeal Conditions as Causative Factors in Aural Disease. G. A. Leland, Boston.
122 Idem. N. H. Pierce, Chicago.
123 Idem. D. B. Kyle, Philadelphia.
124 Surgery of the Esophagus, Laryngologically Considered. C. Jackson, Pittsburg.
125 Three Esophageal Cases. H. P. Mosher, Boston.
126 Space and Time as *Aural Concepts.* P. Fridenberg, New York.
127 Elongated Styloid Process. C. W. Richardson, Washington, D. C.
128 Progress in the Surgical Treatment of Chronic Stenosis of the Larynx and Trachoma. J. R. Winslow, Baltimore.
129 *The Telephone Therapy.* J. G. Wilson, Chicago.
130 Direct Intubation of the Larynx. H. P. Mosher, Boston.
131 Acute Attic Suppuration with Hernia of the *Drumhead Leading to Transient Labyrinthitis.* H. Gradle, Chicago.

Journal of the Tennessee State Medical Association, Nashville

October

132 *Indications for Surgical Intervention in Peptic Ulcer—Choice *of Operation.* J. A. Gaines, Nashville.
133 *Rational Drug Therapy. E. R. Zemp, Knoxville.
134 *Lung Puncture as a Therapeutic Measure. T. J. Coble, Shelbyville.
135 Perineal Prostatectomy. G. B. Livermore, Memphis.
136 Definite Terms in Diseases of the Stomach. E. H. Jones, Murfreesboro.
137 A Word *from the Druggists.* H. C. Shapard, Shelbyville.
138 Cancer of the Stomach: Pylorectomy. B. B. Cates, Knoxville.
139 Eczema of Infancy and Childhood. J. Clear, Clinton.
140 Episcleritis, Treatment. G. H. Price, Nashville.

132, 133, 134. *Abstracted in* THE JOURNAL, May 1, 1909, *p. 1452.*

Journal of Ophthalmology and Oto-Laryngology, Chicago

October

141 *Surgical Correction of Deformities of the Nasal Septum.* E. Pynchon, Chicago.
142 Historical Review of the Development of the Cataract *Operation.* L. Stricker, Cincinnati.

Journal Arkansas Medical Society, Little Rock

October

143 Polypharmacy and Therapeutics; Then and Now. L. P. Gibson, Little Rock.
144 *Acute Dilatation of the Stomach* and Duodenum. C. H. Cargile, Bentonville.

Journal of Advanced Therapeutics, New York

October

145 *Standardization of* High Potential Electric Currents. E. C. Titus, New York.
146 Sciatica. F. B. Granger, Boston.
147 *The Correction* of Flat-Foot (continued). H. McIntosh, Boston.
148 Cases Treated by Static Electricity. A. B. Condict, Delhi, India.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical *lectures,* single case reports and trials of new drugs and artificial foods *are omitted unless of exceptional* general interest.

British Medical Journal, London

October 23

1. Experimental Psychology and [illegible] ge.
2 **Cancer Research.* H. C. Ros [illegible]
3 *The Diagnosis of Malignant [illegible] Index. H. W. Bayly.
4 *Investigation [illegible] ction in Cancer of the Breast. T. [illegible]
5 Cancer in Ne [illegible] p and P. C. Fenwick.
6 *Rodent Ulcer [illegible] bromate. W. Gemmill.
7 *Ascites Due t [illegible] by Operation. G. G. Turner.
8 Primary Carcinoma of the *Appendix.* D. M. Greig.

2. **Cancer Research.**—Ross and *Macalister* place on record some facts regarding a chemical substance which causes a remarkable train of events when it is absorbed by human lymphocytes in that it promotes, first, excitation of ameboid movement, then reproduction, and lastly, it causes death. These events are closely related to each other, and follow in quick succession under experimental conditions. More than a year ago they noted that there appears actually to exist in the body-fluids of persons suffering from *carcinoma* a substance which causes the first of these events in the chain—namely, the excitation of ameboid movements. A *mixture* of *methylene* blue and atropin excites ameboid movements in leucocytes. So does the blood of a cancer patient. The same mixture will cause lymphocytes to extrude flagella with a particle of chromatin at their ends; so will the plasma of a cancer patient. Ross and Macalister have shown that an extrusion of chromatin also appears to be a phenomeno [illegible] which occurs in cancer cells, and that cancer *cells appear* t[illegible] produce "something" which aggravates the disease. It is p[illegible] sible, they say, that this "something" is *chromatin,* and [illegible] support of this theory is the fact that an extract which p[illegible] ably contains chromatin or a derivative of it accelerates action of the *artificial* auxetic. The deduction is that chromatin thrown out by the cancer cells may be the [illegible] which, by affecting some other unknown *substance,* [illegible] *mote a repetition* of the changes which cause the three in the chain to which they have referred.

The promoter of the first of these events (exciter of ameboid movement) has already been described as existing in the blood of cancer patients, and to a greater extent in the juice of a growth. If chromatin, or a derivative of it, is the "something" which aggravates the disease, in order to produce a chain of events similar to that which has been observed in lymphocytes, it will have to aggravate the action of a substance resembling in effect that contained in the anilin dye which causes, first, reproduction and then death. It may also be noted that chromatin is a product of katabolism which, as has been suggested, may predispose to the disease in persons over the age of 40.

Experimentally one can induce mitoses in lymphocytes and these cells present characteristics resembling in many ways those appertaining to cancer cells. Cancer cells frequently show the first (heterotype) mitotic phase; but whether the mitoses induced in lymphocytes are of the first gametic variety remains to be proved. The research which Ross and Macalister have conducted has shown that the actual phenomena of mitosis in human lymphocytes can now be demonstrated. The remarkable differences between these cells and the other leucocytes are now apparent. Lymphocytes respond to the auxetic and endeavor to reproduce themselves, whereas leucocytes do not. The cytoplasmic (Altmann's) granules of leucocytes can be stained without harm to the lives of the cells. The nuclear granules of the lymphocytes, on the other hand, are composed of chromatin, and somatic death occurs when they stain. The fact that the nucleoli of lymphocytes form the centrosomes is also interesting, but not unique, from a cytologic point of view.

3. **Antitryptic Index and Malignant Disease.**—By the antitryptic index is meant the power of inhibiting tryptic digestion possessed by any given serum, compared with such inhibitory power possessed by a normal standard serum; or, in other words, the ratio of the powers possessed by different serums for neutralizing tryptic ferments. Bayly observed that most processes involving cell destruction, whether bacterial, mechanical, or cytolytic, produce a raising of the antitryptic index. The phenomenon, therefore, can be in no way regarded as specific, but this lack of specificity, though it narrows the scope of the reaction, still leaves an ample margin where its utility as an aid to diagnosis in malignant disease is clearly shown. It has been observed that the serum of patients with gastric ulcer gives a nearly normal reaction, and a diagnosis between this condition and carcinoma of the stomach can therefore be facilitated by the antitryptic test. Of 30 cases of cancer studied by Bayly, 26 (86 per cent.) show a markedly raised index. Of the remaining 4 cases (10 per cent.) 3 show practically normal indices, and one shows a subnormal index. This case was a very advanced one.

If bacterial infection is present, this method at the moment cannot claim any great diagnostic value, but in the absence of such infection its great help in affording a diagnosis between malignant disease and gastric or intestinal ulcers, non-malignant strictures, aneurisms, or non-malignant conditions of the bladder (such as stone), pelvic conditions in the female, is apparent. The negative evidence afforded by a normal antitryptic index is also of great value in excluding malignant disease.

4. **Serratus Magnus Infection in Breast Cancer.**—The observation of a number of cases of breast cancer which presented nodular recurrences about the lower half of the scar, led Henderson to believe that in certain instances such recurrences might be due to the almost invariable practice of leaving intact the serratus magnus muscle, perhaps already infected by outlying extensions of growth. If, he says, there are lymphatics in the pectoralis major which communicate at an angle with those in the pectoral fascia, the same arrangement is more than likely to hold good in the case of the serratus magnus, and it will be found in the future to be a routine necessity to remove the "exposed" portion of this muscle in the surgical treatment of those mammary cancers which overlie it.

6. **Rodent Ulcer Treated by Potassium Bichromate.**—The case under consideration was a woman of 82, with a history of having a "sore of the nose" for two years. On examination the condition was found to be typical of rodent ulcer. On account of the extent and position of the ulcer, it was thought impracticable to employ surgical means for its removal. A 10 per cent. aqueous solution of potassium bichromate was painted on the surface of the ulcer night and morning for a few days, until a marked inflammatory reaction in the surrounding tissues occurred, the ulcer being protected between times by a piece of lint retained in position by strips of sticking-plaster. The bichromate was then stopped, and a dressing of boracic ointment applied until the surrounding inflammation was allayed. The ulcer then appeared to be in a healthier condition, the floor having been partly destroyed and granulations becoming evident.

The process was repeated twice, potassium bichromate being painted on the ulcer night and morning as before, with a similar result, and being followed by the application of boracic-acid ointment. The effect of the potassium bichromate was the production of a sloughing of the unhealthy tissue over the whole floor, which extended also under the rolled edge of the ulcer. Healthy granulation was promoted, and after the completion of the third series of applications of the bichromate, the epithelium spread rapidly over the ulcer, which healed completely, leaving a somewhat irregularly pitted scar. From the beginning of the treatment till the ulcer was apparently cured occupied a period of three months.

7. **Omentopexy for Ascites Due to Liver Cirrhosis.**—Turner reports two cases: (1) Cure of ascites due to alcoholic cirrhosis; double radical cure of hernia subsequently; patient alive and well two years and nine months later. (2) Syphilitic cirrhosis; omentopexy; death.

Lancet, London

October 23

9 Recent Advances in Knowledge of Sleeping Sickness. A. G. Bagshawe.
10 Congenital Heart Affections, Especially Diagnosis of the Various Malformations. G. Carpenter.
11 Chronic Glanders in Man, with Reference to an Unusual Type Affecting the Upper Respiratory Tract. O. L. Addison and G. S. Hett.
12 *Two Interesting Bilharzial Conditions. F. C. Madden.
13 Late Rickets (?) in a Previously Healthy Child Aged 13 Years. F. Hernaman-Johnson.
14 *Calcified Left Ovarian Dermoid. F. Ivens.
15 Obliterative Arteritis. R. A. Bennett.
16 Importance of Early Recognition of Tuberculous Mediastinal Glands in Children. J. Allan.
17 Carcinoma of the Appendix. A. M. Kennedy.

12. **Bilharzial Conditions.**—Madden reports cases of bilharzial deposits in the subcutaneous tissue of the penis, bilharziosis of the glans, prepuce and body of the penis, and of bilharziosis of the glans penis ending in epithelioma.

14. **Calcified Left Ovarian Dermoid.**—In Iven's case the tumor was separated from its pedicle, transplanted on to the right broad ligament and vesical peritoneum; removal on the tenth day of the puerperium from a xii-para.

Medical Press and Circular, London

October 13

18 Dechlorination in Treatment of Chronic Nephritis. J. S. Fowler.
19 *Hemorrhagic Diphtheria. J. D. Rolleston.
20 Quacks, False Remedies, and the Public Health (continued). D. Walsh.
21 Mushroom Poisoning. J. Maheu.

October 20

22 *Sudden Death. W. L. Brown.
23 Quacks, False Remedies, and the Public Health (continued). D. Walsh.
24 *Causation in Health and Disease. F. Moulton.
25 Diagnosis and Treatment of Nephritis. J. T. MacLachlan.

19. **Hemorrhagic Diphtheria.**—According to Rolleston, cutaneous hemorrhages occurring during the early stages of diphtheria with or without hemorrhages from the mucous membranes and associated with other features of malignancy, occur in about 5 per cent. of all cases. The severity of the diphtheria attack is usually due to neglect of treatment at an early stage, but is sometimes due to precocious malignancy (syphilis). Hemorrhagic diphtheria is confined to children. It is not affected by the season, sex, or previous health. Reaction to antitoxin is delayed, and the usual sequelæ of serotherapy are much less frequent in hemorrhagic than in milder forms of diphtheria. The mortality of hemorrhagic diphtheria is over 80 per cent. All the patients who

recover suffer from extensive paralysis. Treatment should be large doses of antitoxin and frequent doses of adrenalin.

22. **Sudden Death.**—Sudden death, according to Brown, occurs at two epochs: (1) from birth up to 3 years of age; (2) from 30 onward. From 3 to 14 there is practically immunity, while from 14 to 30 very few cases occur. In the first period, females are affected more commonly than males, perhaps because male children tend to be bigger and stronger; while in the second period males are affected more commonly than females, because in adults the great cause of sudden death is vascular degeneration, to which males are notoriously more liable. Children under 3 are liable to die suddenly from apparently trivial illnesses. This liability is much the greatest during the first year. The post-mortem findings show a much greater variety of causes in children than in adults. Among these Brown found pulmonary collapse, suprarenal hemorrhage, and lymphatism. Among adults, the causes of sudden death are aortic regurgitation, which is the great valvular lesion producing sudden death, hemoptysis from advanced phthisis, vascular degeneration, which is the great cause of sudden death, especially premature degeneration—that is, while an active life is still being led; rupture or dilatation or an atheromatous artery is then much more likely to occur. Other causes are granular kidney without other obvious cause of death; atheroma of coronary artery; ruptured aneurism; pneumonia, cerebral hemorrhage; and persistent thymus.

24. This article also appeared in the *Lancet*, Oct. 9, 1909.

Clinical Journal, London

October 13

26 [illegible] is. H. H. Tooth.
27 [illegible] of Stomach and Intestines; Diagnosis and Treatment (to be continued). S. Martin.
28 Some of the Difficulties in the Diagnosis and Treatment of Appendicitis. R. Bucknall.

October 20

29 Gout. S. West.
30 Functional Disorders of the Stomach and Intestines; Their Diagnosis from Organic Disease and Treatment (continued). S. Martin.
31 Significance of Pain. H. MacNaughton-Jones.

Journal of Tropical Medicine and Hygiene, London

October 1

32 Fowl Spirochetosis. A. Balfour.

Journal of Obstetrics and Gynecology of the British Empire, London

October

33 *Critical Inquiry into the Causes of the Internal Rotation of the Fetal Head. R. H. Paramore.
34 Statics of the Pelvic Viscera, and Their Relationship to the Operative Treatment of Uterovaginal Prolapse. G. A. Casalis.
35 Age of Onset of Menstruation in Egyptian Girls. B. S. Elgood.

33. **Internal Rotation.**—Paramore is of the opinion that the factors concerned in causing internal rotation of the head are: (1) the expulsive force from above; (2) the obstructing, central fixing force from below; (3) the shape of the pelvis; (4) the shape, size, consistence and position (flexion) of the fetal head.

Annals of Tropical Medicine and Parasitology, London

October

36 *Mechanism of Production of Hemoglobinuric Fever. J. O. W. Barratt and W. Yorke.

36. **Production of Hemoglobinuric Fever.**—This is the report of the blackwater fever expedition to Nyasaland of the Liverpool School of Tropical Medicine, 1907-1909. The report is very full and it is only possible to refer very briefly to some of the conclusions drawn by the investigators. The first point studied was the hemolysis of red blood cells by quinin and also by acid, alkali and urine. The authors found that quinin bihydrochlorid and quinin in the alkaloidal state produce hemolysis of red blood cells, as do also hydrochloric acid and sodium hydrate, and that the action of quinin in the alkaloidal state in producing hemolysis resembles a catalytic action. Hemoglobin breaks up at a monomolecular rate under the action of quinin in the alkaloidal state. These four hemolytic agents possess, in equimolecular concentration, nearly the same hemolytic power, quinin in the alkaloidal state being weaker, and quinin bihydrochlorid stronger than hydrochloric acid and sodium hydrate, which occupy an intermediate position. Owing to the toxicity of quinin its concentration in the blood cannot reach an amount sufficient to allow of its direct hemolytic action on red cells taking place during life. The red blood cells during blackwater fever are not hemolyzed by quinin bihydrochlorid more readily than in health. In the presence of urine, hemoglobin, whether contained in red blood cells or in solution, is broken up. In the former case this proceeds at a monomolecular rate, no hemoglobin being discharged from the red cells into the urine, until destruction is nearly complete.

In studying the mechanism of production of suppression of urine in blackwater fever, the authors found that during experimental hemoglobinuria dependent on hemoglobinemia, as also in the hemoglobinuria of blackwater fever, granular casts of varying size, sometimes very soft, sometimes firm and dense, often containing degenerated nuclei derived from the epithelium of the renal tubules, were met with in the urine. During suppression in blackwater fever the urine contained very large firm casts with exceedingly coarse granules, often surrounded externally by epithelioma derived from the ducts of Bertini, in which these casts were formed. The amber-colored urine passed during partial suppression contained a large amount of coagulable proteid. The average daily amount of urine passed during nine days of partial suppression was in one case 28 c.c., in another case 66 c.c. They conclude that suppression of urine in blackwater fever is of mechanical origin, due to a blocking of the renal tubules. During simple uncomplicated hemoglobinuria of blackwater fever the sole pathologic condition existing in the kidneys appeared to be the presence of brown granular material in the lumen of the renal tubules. Venereal disease does not appear to influence either the tendency to blackwater fever or its severity when present. The clinical histories of the 17 cases studied are given in full.

Australasian Medical Gazette, Sydney

September

37 The Consumption Problem. C. Reissmann.
38 Therapeutics of Pulmonary Tuberculosis. A. Stewart.
39 Bacteriologic Examinations in Diphtheria. R. J. Millard.
40 Flies in Dissemination of Disease. J. B. Cleland.
41 Rôle of Water in the Spread of Human Helminthiasis. T. H. Johnston.
42 Fracture of the Base of the Skull. W. T. Hayward.
43 Acute Pancreatitis. E. J. Frayne.
44 Hemorrhage and Jaundice in New-born Infants. J. A. Cameron
45 Three Ectopic Gestations in One Patient. F. J. T. Sawkins.

Bulletin de l'Académie de Médecine, Paris

October 5, LXXIII, No. 31, pp. 135-740

46 Robert-Houdin's Ophthalmologic Instruments. (Sur quelques instruments destinés à l'étude de la vision entoptique.) P. Yvon.
47 *Organotherapy in Addison's Disease. (Opothérapie surrénale dans la maladie d'Addison.) E. Boinet.

47. **Organotherapy in Addison's Disease.**—Boinet reports a case of well-defined Addison's disease in which the extreme languor, asthesia and emaciation indicated a rapidly fatal outcome, but under organotherapy the symptoms subsided and the patient, a man of 34, has been in good health during the ten years since. The gland substance was eaten fresh and a glycerin extract was injected two or three times a week. There are still traces of pigmentation, confirming, he thinks, the assumption of the nervous origin of this symptom. Béclère has reported a similar case of permanent recovery under organotherapy. The suprarenal treatment evidently acts by stimulating to hypertrophy the parts of the suprarenal capsules which are still intact, thus ensuring adequate functioning. Boinet cites five other cases that have been reported in France with marked improvement under organotherapy and adds three from his own experience, all the symptoms, except the pigmentation, showing great benefit from the suprarenal treatment. Two of these patients were women of 60 and 66, and the third was an omnibus conductor of 40 who was given treatment in the form of adrenalin by the mouth, 7 or 8 drops a day of the 1 to 1,000 solution. This was kept up for a month without signs of intolerance, and the patient regained his strength and resumed his work. In four other cases the suprarenal treatment failed to arrest the disturbances. One patient overdosed herself, with intolerance as the result and

...ous disturbances, the disease running its usual course. In the second case in this group a fibrocaseous tuberculous process terminated in the syndrome of acute suprarenal insufficiency. The patient was a mechanic of 33 with the classical syndrome of the disease, which was much ameliorated by injection of suprarenal extract for nearly a year. After a very fatiguing day he was given a subcutaneous injection of ½ mg. of adrenalin. This was followed by symptoms of acute suprarenal insufficiency, rapidly fatal. In the two other cases the rapidly fatal acute syndrome of suprarenal insufficiency followed soon after injection of one or two minute doses of adrenalin. In the condition which Sergent calls "Addisonism," that is, the Addison syndrome with pigmentation and capsular insufficiency resulting from sclerosis of the gland, as well as in the condition, without pigmentation, resulting from sclerous inflammation, the prognosis of superposed acute pulmonary affections is much graver than ordinary. This condition of Addisonism is more promising for organotherapy than the cases of fibrocaseous suprarenal tuberculosis. Suprarenal sclerosis is frequently encountered during or toward the end of pulmonary tuberculosis, while extensive fibrocaseous tuberculosis of the suprarenals is generally primary and is restricted to these glands. The secondary suprarenal process, causing Addisonism, in the course of tuberculosis of the lungs or intestines, is sometimes favorably influenced by ingestion of sheep suprarenal glands. In one such patient, the pigmentation has subsided and the symptomatic improvement has been marked. Sézary has recently compiled 17 cases of sclerous inflammation of the suprarenals presenting the syndrome of gradual suprarenal insufficiency with pigmentation—it is possible that the cases of recovery from Addison's disease under organotherapy all belong in this category and were not cases of true Addison's disease from primary and extensive tuberculosis of the suprarenal capsule.

Obstétrique, Paris

September, New Series II, No. 9, pp. 629-692

48 *Indications for Delivery by Rapid Dilatation of the Cervix. (L'accouchement par dilatation rapide du col.) P. Bar.
49 Historical Sketch of Maternities at Paris. C. Maygrier.
50 Twin Monster. (Monstre double derodyme tribrachie humain.) L. Tribondeau.

48. **Rapid Delivery.**—In this communication read at the international medical congress Bar compares the various methods for rapid delivery and the advantages according to the individual indications. He has used the Bossi dilator in 13 cases with no fatalities, but the cervix was lacerated in every case and the tear was very extensive in all but 3. In 20 cases in which he dilated the cervix with *his fingers*, laceration occurred in 30 per cent., and 2 of the women succumbed to hemorrhage. Bonnaire had also 16 per cent. of severe lacerations in 159 cases of digital dilatation. The inflatable bag has been applied by Bar for dilatation in 171 cases; the entire lower *segment was not torn* in any case and no fatal hemorrhage occurred, but slight lacerations were the rule. Lacerations in the cervix are liable to lead to *immediate* complications and by cicatric tissue growth to favor secondary infection of the cervi r. Except large multiparæ artificial rapid dilatati the ce unable to open the way entirely for d paratively insignificant lacerations caused instrument tear further as the chil being liable to extend far up into the ues.

Revue de Chiru

October, XXIX, No.

51 "Position" Treatment of Fractu
52 *Walking Apparatus in Treatme
ete. (La marche directe dan
thode du Professeur Pierre
a).
53 islocation of Hip-Joint
Varieties. (Les lu
Le Damany.
54 *Fla aturing Blood-V
d le et veineuse.)

52. **W lk ture of t** ca.
number of
reexamined
results of trea
use the limb in

atrophy of muscles or stiffness of joints with these walking casts, as when the limb is immobilized. In the cases reported the healing was complete in a short time, the patients leaving the hospital cured by the fortieth or sixtieth day, with good functional use of the leg. The technic for making the casts is illustrated.

54. **Flap Method of Suturing Blood-Vessels.**—The stumps of the vessel are cut square across and then slit on each side *for about a quarter of an inch.* The two stumps are then approximated, the flaps spreading apart as the stumps are pressed together until the farther end of the slits on each stump are brought close together and sutured, the projecting flaps on each side being ligated at their base. Instead of a *circular suture, there are thus only two linear sutures while* the lumen of the vessel is not rendered any smaller.

Deutsche medizinische Wochenschrift, Berlin

October 14, XXXV, No. 41, pp. 1777-1816

55 *Treatment of Eczema. (Prinzipien der Ekzembehandlung.) W. Scholtz.
56 in Orthopedics. O. Vulpius.
57 th Mercury and Atoxyl Salts.
Quecksilbers auf die menschliche
Syphilis.) Mickley.
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Deutsche Zeitschrift für Chirurgie, Leipsic

September, CI, Nos. 3-4, pp. 205-412

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XX, No. 4, pp. 565-726. Last Indexed October 16, p. 1342

74 Experimental Research on Changes Induced by Stones in Urinary Apparatus. (Die nach der Anwesenheit von Steinen auftretenden Veränderungen im Harnapparate.) Kumita.
75 Teleangiectatic Granuloma. K. Reitmann.
76 *Pathology and Pathogenesis of Acromegaly. A. Exner.
77 *Function of the Celiac Ganglion. A. Exner and K. Jaeger.
78 Secretion in Goiters. (Zur Lehre der Sekretion in der Struma.) Lobenhoffer.
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nervous disturbances, the disease running its usual course. In the second case in this group a fibrocaseous tuberculous process terminated in the syndrome of acute suprarenal insufficiency. The patient was a mechanic of 35 with the classical syndrome of the disease, which was much ameliorated by injection of suprarenal extract for nearly a year. After a very fatiguing day he was given a subcutaneous injection of 1/3 mg. of adrenalin. This was followed by symptoms of acute suprarenal insufficiency, rapidly fatal. In the two other cases the rapidly fatal acute syndrome of suprarenal insufficiency followed soon after injection of one or two minute doses of adrenalin. In the condition which Boinet calls "Addisonism," that is, the Addison syndrome with pigmentation and capsular insufficiency resulting from sclerosis of the gland, as well as in the condition, without pigmentation, resulting from sclerous inflammation, the prognosis of superposed acute pulmonary affections is much graver than ordinary. This condition of Addisonism is more promising for organotherapy than the cases of fibrocaseous suprarenal tuberculosis. Suprarenal sclerosis is frequently encountered during or toward the end of pulmonary tuberculosis, while extensive fibrocaseous tuberculosis of the suprarenals is generally primary and is restricted to these glands. The secondary suprarenal process, causing Addisonism, in the course of tuberculosis of the lungs or intestines, is sometimes favorably influenced by ingestion of sheep suprarenal glands. In one such patient, the pigmentation has subsided and the symptomatic improvement has been marked. Sézary has recently compiled 17 cases of sclerous inflammation of the suprarenals presenting the syndrome of gradual suprarenal insufficiency with pigmentation—it is possible that the cases of recovery from Addison's disease under organotherapy all belong in this category and were not cases of true Addison's disease from primary and extensive tuberculosis of the suprarenal capsule.

Obstétrique, Paris

September, New Series II, No. 9, pp. 629-692

48 *Indications for Delivery by Rapid Dilatation of the Cervix. (L'accouchement par dilatation rapide du col.) P. Bar.
49 Historical Sketch of Maternities at Paris. C. Maygrier.
50 Twin Monster. (Monstre double derodyme tribrachie humain.) L. Tribondeau.

48. **Rapid Delivery.**—In this communication read at the international medical congress Bar compares the various methods for rapid delivery and the advantages according to the individual indications. He has used the Bossi dilator in 13 cases with no fatalities, but the cervix was lacerated in every case and the tear was very extensive in all but 3. In 20 cases in which he dilated the cervix with his fingers, laceration occurred in 30 per cent., and 2 of the women succumbed to hemorrhage. Bonnaire had also 16 per cent. of severe lacerations in 159 cases of digital dilatation. The inflatable bag has been applied by Bar for dilatation in 171 cases; the entire lower segment was not torn in any case and no fatal hemorrhage occurred, but slight lacerations were the rule. Lacerations in the cervix are liable to lead to immediate complications and by cicatricial tissue growth to favor secondary infection of the cervix later. Except in large multiparæ artificial rapid dilatation of the cervix is unable to open the way entirely for delivery and the comparatively insignificant lacerations caused by the fingers, bag or instrument tear further as the child is born, the laceration being liable to extend far up into the cervix and environing tissues.

Revue de Chirurgie, Paris

October, XXIX, No. 10, pp. 571-721

51 "Position" Treatment of Fractures of the Clavicle. Couteaud.
52 *Walking Apparatus in Treatment of Fracture of the Tibia, etc. (La marche directe dans les fractures de jambe—méthode du Professeur Pierre Delbet.) P. Mocquot and J. Caraven).
53 Congenital Dislocation of Hip-Joint. Date of Occurrence and Pathogenic Varieties. (Les luxations congénitales de la hanche.) P. Le Damany.
54 *Flap Method of Suturing Blood-Vessels. (Nouveau procédé de sutures artérielle et veineuse.) A. Pirovano.

52. **Walking Casts for Fracture of the Tibia or Ankle.**—A number of the 29 patients whose cases are reported were reexamined recently and the findings confirmed the good results of treatment with a cast which allows the patient to use the limb in walking from the first. There is no pain, edema, atrophy of muscles or stiffness of joints with these walking casts, as when the limb is immobilized. In the cases reported the healing was complete in a short time, the patients leaving the hospital cured by the fortieth or sixtieth day, with good functional use of the leg. The technic for making the casts is illustrated.

54. **Flap Method of Suturing Blood-Vessels.**—The stumps of the vessel are cut square across and then slit on each side for about a quarter of an inch. The two stumps are then approximated, the flaps spreading apart as the stumps are pressed together until the farther end of the slits on each stump are brought close together and sutured, the projecting flaps on each side being ligated at their base. Instead of a circular suture, there are thus only two linear sutures while the lumen of the vessel is not rendered any smaller.

Deutsche medizinische Wochenschrift, Berlin

October 14, XXXV, No. 41, pp. 1777-1816

55 *Treatment of Eczema. (Prinzipien der Ekzembehandlung.) W. Scholtz.
56 Value of Portable Apparatus in Orthopedics. O. Vulpius.
57 Treatment of Syphilis with Mercury and Atoxyl Salts. (Wirkung des atoxylsauren Quecksilbers auf die menschliche Syphilis.) Miekley.
58 *Deprivation of Salt in Affections of Urinary Passages During Pregnancy. (Ueber Chlornatriumentziehung bei Erkrankungen der Harnwege während der Schwangerschaft.) O. Jaeger.
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with retrogression of the acromegaly in the first 2, while in the third case the growth was too extensive to permit of complete removal. The close connection between the hypophysis and the functioning of the ovaries was evident in all; the thyroid gland increased in size after the operation in the first 2 cases. Exner points out features in the cases which show the close analogy between the conditions in pregnancy and in persons with deficient ovarian functioning on one hand and the conditions in acromegaly. In all there are changes in the hands and feet, abnormal growth of hair on the body, all of which return to normal on the conclusion of the pregnancy or removal of the hypophysis tumor. His research on the pathology and pathogenesis of acromegaly included transplantation of hypophyses in animals; it was followed by a gain in weight much beyond that of the controls. Study of the cases and results of experimental research have thrown light on a number of interesting points in regard to the mutual relations of individual organs.

77. **Functions of the Celiac Ganglion.**—In the case described, the retroperitoneal nerves had evidently been involved in a tumor which soldered the pancreas and rear wall of the pylorus together. The effect on the intestines was such as to simulate stenosis at several points, and experiments on animals confirmed the assumption that the celiac ganglion possesses fibers which have an inhibiting action on the movements of the intestines. When this ganglion is not functioning, the contractions of the intestines and peristalsis are much more intense and lasting than under normal conditions.

79. **Dilatation of Cecum as Independent Affection.**—Fischler has encountered 41 cases in which there seemed to be an isolated dilatation of the cecum, the syndrome suggesting chronic appendicitis in many respects, but it is evidently a morbid entity in itself. The appendix may or may not be involved in the process, but its removal does not effect a cure. The trouble is a muscular insufficiency of the cecum, the result of a localized catarrhal condition. The symptoms resemble those of dilatation of the stomach, the defective peristalsis, the sounds, the abnormal fermentations and gas formation, the catarrhal changes and the inability to pass the contents along. The affection is long in development and may persist indefinitely. He enumerates the various points differentiating the condition from Nothnagel's pseudoappendicitis, acute and chronic appendicitis, wandering kidney, affections of the adnexa and disturbances resulting from adhesions. In treatment, the aim should be to cure the chronic catarrh in the cecum. Albu demands a very exacting course of treatment for this, several weeks in bed, with tepid packs to the abdomen in case the disturbances are severe, vegetable food in the form of purées to keep the bowels regular, with oil, glycerin and soap enemas and a purgative twice a week, with belladonna suppositories three times a day and constant avoidance of physical exertion. But Fischler thinks that such a severe course of treatment is not required. The first thing is to exclude chronic appendicitis; this belongs to the surgeon. After the appendix has been removed, if this is necessary, the diet is regulated, reducing the amount of food as a whole, and inquiring to learn whether too much albumin, fat or carbohydrates is being taken in proportion to the total. Any excess of either should be stopped, and all substances liable to induce flatulence should be avoided for a time, dropping further from the diet any article of food which the patient has learned he cannot tolerate, milk in one case, beer in another, etc. Regular exercise is indispensable, especially that which calls the long muscles of the abdomen into play; when there is pain, it is best to avoid injudicious exertion. Massage is also useful, but the patient must be trained to apply it correctly, helping with light massage to push the contents of the cecum onward. The symptoms due to meteorism soon yield to appropriate massage, but applied ignorantly it is liable to increase the tendency to atony. Purgatives must be strictly avoided, as they aggravate the inflamed condition in the bowel. Oil and other enemas may be useful for a time, but they do not reach the seat of the trouble. The most important indication is to transform the intestinal flora, and this is best accomplished, he has found, by bismuth. He gives the subnitrate mixed with equal parts of magnesia usta to which a little pulverized rhubarb is added. A teaspoonful or less of this mixture is taken in water, after meals, three times a day, and benefit has always followed its persevering use. In case of much diarrhea he prefers bismuth salicylate as it is more constipating and has a stronger disinfecting action. He found bolus alba useful in 2 cases with much diarrhea and pain. Aside from these he gives no other drugs, but sometimes orders a wet pack at night over the region of the cecum. The patient soon learns to appreciate the benefit from the combined method of mixed but restricted diet, suitable regular exercise, massage and careful avoidance of allowing the abdomen to become chilled night or day, with occasional resort to the bismuth mixture as needed. He gives a detailed account of 3 typical cases out of his total of 41. An operation was required in 5. Two of the 3 cases reported were particularly instructive as the patients were physicians.

Münchener medizinische Wochenschrift

October 5, LVI, No. 40, pp. 2041-2088

81 Tuberculin in Diagnosis and Treatment, and Metabolism during Tuberculin Reaction. Saathoff.
82 Antiproteolytic Substance in Infants' Serum. (Ueber die antiproteolytische Substanz im Blutserum gesunder und kranker Säuglinge.) F. Lust.
83 Postoperative Reaction Glioma. (Das reaktive Gliom.) L. Merzbacher.
84 Chemistry of Tuberculous Sputum. Prorok.
85 *The Cammidge Pancreatic Reaction. O. Schumm and C. Hegler.
86 *Application of Cold to Back of Neck in Asthma and Rhinitis. (Therapeutische Kälteapplikationen auf den Nacken.) J. Marcuse.
87 Chronic Inflammatory Tumors in Abdominal Wall After Herniotomies. (Ueber chronisch entzündliche Bauchdeckengeschwülste nach Hernienoperationen.) E. Kreuter.

85. **The Cammidge Pancreas Reaction.**—Schumm and Hegler state that in many cases the response to the Cammidge test is merely a positive grape sugar test. They have simplified the Cammidge technic somewhat, and say that with their modification the test is more sensitive.

86. **Application of Cold to the Back of the Neck to Relieve Asthma.**—Marcuse confirms Muck's announcement in regard to the efficacy of the sudden application of a jet of cold water to the back of the neck as a means of controlling an attack of asthma. His experience has demonstrated that this is one of the most powerful means of acting on the respiration. The patient stoops over, and cold tap water is poured on the back of the neck from a pitcher holding over a gallon, held about two feet above; this is kept up for from half a minute to a minute and a half, or a strong jet of water is applied through a tube from the hydrant. He applies the water thus daily or two or three times a day, when the patient is being systematically treated for asthma, with or without preceding electric light baths. Muck advocates this measure as a means of relief in congested conditions in the nose, and Jurasz to arrest threatening espistaxis.

Therapeutische Monatshefte, Berlin

October, XXIII, No. 10, pp. 519-566

88 *Treatment of Stuttering. (Behandlung des Stotterns.) H. Gutzmann.
89 Action of Iodin. (Iodwirkung.) W. Heubner.
90 Importance of Supervising the Weight and Keeping the Appetite Good D [illegible] nt. (Bemerkungen über das Verhal [illegible] und die Diätetik während der Ilg. [illegible] isen.

88. **Treatment of Stuttering.**—Gutzmann is in charge of the university institute at Berlin for treatment of disturbances in speech, and his experience has convinced him of the extreme importance of careful study of the conditions in each individual case, not only the external and internal elements of the speech, but the character, temperament and secondary psychic phenomena, and after careful diagnosis, teaching the patient to imitate the processes of normal speech as he practices the elements in turn. To treat stuttering properly, he declares, the physician must be a good internist besides his special training in the nature and phenomena of stuttering. Among the points he has found particularly useful are training the patient to speak in a lower and monotonous tone, without stress on any syllables, the whole speech soft and gentle; when adult stutterers are particularly nervous he gives a little bromid preliminary to the exercises. A child who stutters does not get the training in speaking and expressing his

thoughts readily and in reading aloud which other children obtain, so that these children are backward in this respect after the stuttering is conquered. The main trouble in stuttering is in the defective use of the lips, tongue or throat, defective inspiration or expiration, even when the patient is speaking without stuttering. This is one of the reasons why psychotherapy fails—the underlying cause for the trouble has not been removed. Surgical treatment is effectual only in removing mechanical obstacles preliminary to the training of the organs to proper speech. The stutterer's dread and other secondary psychic phenomena subside spontaneously when he learns to control his speech. Gutzmann remarks in regard to quack advertisements that the "guarantee to cure" stuttering may afford a handle for prosecution of the quack as seeking to obtain money under false pretenses. Application of hypnosis to cure stuttering he regards as usually worse than the affection itself; he has frequently encountered cases in which hypnosis had been systematically applied by physicians over a long period without results. Dietetic and general tonic measures are always a powerful aid in the cure of stuttering.

Therapie der Gegenwart, Berlin

October, L, No. 10, pp. 459-504

91 *Indications for Restriction to a Milk Diet. (Ueber ältere und neuere Indikationen der Milchdiät.) E. Magnus-Alsleben.
92 *Gauging Residual Air with Emphysema, with Special Regard to Chondrotomy. [illegible] an Emphysematikern, unter b[illegible] der W. A. Freundschen Operat[illegible]
93 *Influence of Roentgen Rays on Composition of Blood and Urine in Mixed-Cell Leucemia. (Fall mischzelliger Leukämie mit Röntgenstrahlen behandelt.) W. A. Boekelmann and C. J. C. van Hoogenhuyze.
94 Epidemic Occurrence of Appendicitis. (Das epidemische Auftreten der Appendizitis.) W. Klink.
95 *Necessity for Improvement in Preparation of Food for the Sick. (Bedeutung der diätetischen Küche für die Schonungsdiät.) W. Sternberg.
96 Influence of Deep Breathing on Metabolic and Respiratory Disturbances. (Einfluss tiefer In- und Exspirationen bei Stoffwechsel- und Luftwegeerkrankungen. (Chinesische Riechpulver.) R. Budberg.
97 Operation for Phimosis—Circumcision. C. Gerson.

91. Exclusive Milk Diet.—The indications for an exclusive milk diet have been considerably restricted of late years, especially in regard to nephritis and gastric ulcer. On the other hand, it is being recommended more than ever in the treatment of certain forms of heart disease, nervous prostration and in obesity. An exclusive milk diet has also been found useful in severe neuralgia. Hoffmann lauds it especially for this purpose, and His advocates avoidance of meat, at least.

92. Operative Treatment of Emphysema.—Strauch has had opportunity to examine three patients after the Freund operation had been performed, one both before and after the operative treatment for emphysema. The spirometer showed that comparatively little benefit had been derived from the operation; there was still an excessive amount of residual air, high total capacity and small vital capacity.

93. Blood and Urine in Leucemia After Roentgen Exposures.—The case of mixed cell leucemia reported is interesting, especially on account of the careful and prolonged study of the metabolism during Roentgen treatment and afterward on a diet free from nuclein, the research extending over six months. The findings are given in tabulated form, listed under thirty-two headings.

95. Improved Methods in Preparing the Food for the Sick.—Sternberg pleads again for the introduction into the household and the hospital of the methods of preparing the food practiced by French chefs. High art in culinary matters is characterized by extremely fine division of the substances, such as is possible only by grinding in a large mortar with heavy pestle and forcing through very fine sieves. The lack of these in the ordinary kitchen deprives the diet for the sick of its most important features. Ordinary strainers rest on the top of the vessel and it is impossible to apply much force. He advocates the drum hair sieve used by chefs, with meshes no larger than a fine needle. Considerable improvement is possible even with an ordinary kitchen sieve in the shape of a pan, if the sieve is turned upside down on the table so that force can be applied in putting the articles through it. He gives illustrations of chopped meat prepared for the ordinary ulcer diet and of the same meat as prepared by a chef, nearly half of the amount remaining on the strainer as connective tissue residue. This the chef uses for his soup stock, but in the hospitals or household it is all given to the ulcer patient in his chopped meat. It is important in putting the mass through the sieve to use a pestle for the purpose, rather than a spoon. He adds in conclusion that it is high time for dietetic therapy and technic to catch up with the progress in every other therapy and technic. The greater part of the work in high art cooking is in the preparation of the food before it is ready to cook.

Wiener klinische Wochenschrift, Vienna

October 7, XXII, No. 40, pp. 1359-1394

98 Congenital Predisposition to Appendicitis. (Ueber angeborene Lageanomalien des Wurmfortsatzes und angeborene Disposition für Appendizitis.) H. Albrecht.
99 Pathogenesis of Angiosclerosis. J. Tornai.
100 *Concussion of the Brain. (Ueber Gehirnerschütterung.) K. Ewald.
101 *Technic for Safely Evacuating Infectious Fluids. (Zur Frage der Entleerung infektiöser Flüssigkeitsansammlungen, insbes. des Darminhaltes bei Ileus.) H. v. Haberer.
102 A Specific Anaphylactic Reacting Body in the Blood with Tumor. (Zur Frage des Nachweises eines spezifischen anaphylaktischen Reaktionskörpers im Blute von Tumorkranken.) E. Ranzi and H. Pfeiffer.
103 Technic and Importance of the Wassermann Reaction. R. Müller.

100. Concussion of the Brain.—Ewald has been examining recently 45 patients treated since 1902 for concussion of the brain. He was surprised to find that only 11 had entirely recovered; the earning capacity in 23 was not materially impaired, although 12 patients had occasionally to leave work for a few minutes, hours or days on account of headache or vertigo. In 11 of the 45 cases extreme irritability had developed, but in one case it had subsided again. The memory was impaired in 9 cases. In 26 cases headache was complained of, continuous in a few. His experience shows that when the headache persists longer than six months permanent recovery seldom follows. In 12 other cases in which there was fracture of the base of the skull complete recovery was found in only 3 cases; the symptoms of vertigo, headache, irritability and restless sleep were more pronounced in this group. The 3 complete recoveries were in men who had had both fracture and concussion.

101. Technic for Evacuating Infectious Fluids.—Haberer gives an illustrated description of an apparatus which he has found extremely useful for evacuating the contents of the colon in ileus or of an ovarian cyst. Two tubes pass through the stopper into a large jar, one connected with an air pump, the other tube terminating in a trocar, fitting inside a small cylinder which presses firmly against the tissues as the trocar is introduced. The tissues are drawn up into this cylinder by the aspiration at the same time as the contents of the organ punctured are aspirated into the jar through the trocar. There is thus no danger of escape of the infectious fluid.

Zentralblatt für Chirurgie, Leipsic

October 9, XXXVI, No. 41, pp. 1401-1432

104 *Viscosity of the Blood in Surgical Affections and Operations. (Blutviskosität bei chirurgischen Krankheiten und Operationen.) W. Müller.
105 *Improved Technic for Vein Anesthesia. (Zur Venenanästhesie Bier's.) Momburg.

October 16, No. 42, pp. 1433-1464

106 *Technic for Anesthesia by the Rectum. (Ueber Rektalnarkose.) F. Dumont.

104. The Viscosity of the Blood in Surgical Affections.—Müller has been examining the viscosity of the blood in 230 patients with surgical affections at König's clinic at Altona during the last two years. He has made 1,050 separate investigations; these have shown that the viscosity of the blood depends on the number and the hemoglobin content of the red corpuscles and on the albumin content of the serum. After an aseptic operation in which the peritoneum is opened the viscosity of the blood increases rapidly during the next day and then in the next four days gradually decreases to normal, and in the following two days drops considerably below normal, then gradually returns to normal by the end of the week. In case of acute inflammation the viscosity is abnormally high, but the gradual decline below normal forms the same characteristic curve as he shows by several examples. He calls this decline below normal the phase of exhaustion. The importance of these curves is shown in the fact that any focus of inflammation keeps the viscosity high, so that the rapid and regular postoperative decline is a sign of freedom from complications.

105. **Improved Technic for Vein Anesthesia.**—Bier's technic for this method of restricted anesthesia was described with an illustration in The Journal, May 1, 1909, page 1466. Momburg states that this technic has the disadvantage that the central constricting band gradually causes more and more discomfort to severe pain in the course of ten or fifteen minutes. This can be prevented by applying, after the anesthetic has been injected, a third constricting band just below the upper band and then removing the latter. The third band causes no discomfort as it is applied just within the margin of the anesthetized area. It can be applied over the minute incision made to expose the vein.

106. **General Anesthesia by the Rectum.**—Dumont protests that nothing but the fumes of ether should be allowed to pass into the rectum. His communication on rectal anesthesia was summarized in The Journal, Feb. 6, 1909, page 515. The unfavorable experiences that others have reported are due, he affirms, to neglect of the precautions which he advocated; chief among them is the interposition of a glass bulb between the jar of ether and the rectal tube. The ether has to traverse this bulb on its way to the rectum. It is brought into the bulb in a smaller, inner tube, the end curving downward inside the bulb, thus facilitating the dropping to the bottom of the bulb of any droplets that may condense from the fumes. In an operation of 80 minutes' duration 60 c.c. of condensed fluid accumulated in the bulb.

Gazzetta degli Ospedali e delle Cliniche, Milan

October 7, XXX, No. 120, pp. 1265-1272

107 *Etiology of Nephritis. E. Maragliano.

October 10, No. 121, pp. 1273-1288

108 *Treatment of Nephritis. (I nuovi orizzonti della terapia delle nefriti.) A. Calabrese.

109 *Primary Splenomegaly. S. Micheli and C. Bozzolo.

October 12, No. 122, pp. 1289-1296

110 *Prophylaxis of Malaria. A. Graziani.

107. **Etiology of Nephritis.**—Maragliano declares that the present conceptions and classification of nephritis are erroneous; in nephritis the kidney is merely the exponent of a general morbid condition affecting the entire organism, defective oxidation processes, some profound modification in the cellular activity, with consequent accumulation of intermediate waste products. The nephritic kidney still retains its permeability; even in advanced degeneration there are always portions of the kidney left in good condition. These suffice for all purposes of elimination as a large part of the kidney tissue is a reserve supply in excess of what is required for ordinary functioning. The kidney is thus always permeable and it eliminates what it receives. The imperfect waste matters found in the urine in cases of nephritis do not testify to retention by the kidney, but merely to imperfect oxidation processes. Instead of testing for permeability and retention it is more logical, he asserts, to compare the total nitrogen and the ureic nitrogen as found in the urine and the blood. The problem is to decide the relations between the diseased kidney and the disturbances in the cellular processes. He adds that isolated brief periods of retention may occur from some nervous, inhibiting action or from obstructing of the tubules, but this is transient and elimination of an extra amount of waste follows. The disturbance in the cells results in production of some nephrolytic substance and the action of this on the kidneys, superposed on the general disturbances from the primary cause, produces the syndrome of nephritis. Both acute and chronic nephritis are curable if the primary morbid cause can be expelled. The kidney has a tendency to recuperate, and this change in the conception of nephritis puts an end, he declares, to the traditional fatalism in regard to the prognosis.

108. **Treatment of Nephritis.**—Calabrese protests against exaggeration and exclusiveness in dieting in nephritis; there is no need to exclude salt, he says, unless tests show that there is retention of chlorids. Unusual quantities of fluids need not be advised unless there seems to be a tendency to functional paralysis on the part of the kidneys. In this case water is better than drugs to stimulate kidney functioning unless the heart is weak and dilated, in which case the intake of fluids should be restricted. Venesection applied to the foot drains the congestion in the renal artery most effectually, but the main reliance is on measures to promote oxidations, and the elaboration of the albuminoid molecule by inhalation of oxygen and administration of iodids and alkalines. Organotherapy and serotherapy to date are still on trial. Surgical intervention is purely symptomatic and should not be considered until after failure of all medical means.

109. **Primary Splenomegaly.**—Micheli concludes his review of primary splenomegaly by stating that only primary tuberculous splenomegaly and Banti's disease, which he identifies with adults' splenic anemia, can be regarded as true primary splenomegaly. Bozzolo discusses treatment and relates his experience in 3 cases of Banti's disease in which splenectomy was done in 1900, 1902 and 1905 respectively. The patients were women between 29 and 45, and the cure has been complete to date, but in 3 other cases the patients did not survive the operation, and in 3 others it could not be concluded. The gravity of the operative traumatism, the multiplicity and toughness of the adhesions, the hemorrhagic diathesis and the lesser resistance of male patients, explain the difficulties and dangers of operative intervention in these cases. It seems to be always followed by gastrointestinal hemorrhage, pneumonia or fever, and should not be advised in all cases, especially not in advanced stages. A less difficult operation, possibly omentopexy, might answer the purpose. Tansini combined this with splenectomy in one successful case. In primary tuberculous splenomegaly, on the other hand, the patient can only gain by the splenectomy, even when the liver is involved in the process. Removal of the tuberculous spleen has given encouraging results to date in the cases on record. The liver lesions are arrested and retrogress.

110. **Prophylaxis of Malaria.**—Graziani has been studying the effect on the organism of long-continued administration of minute doses of quinin such as are advised as a prophylactic measure in endemic foci of malaria. The growth of young animals under the influence of minute doses of quinin for 100 days was compared with that of controls, the series including 24 rabbits and 30 guinea-pigs. The bactericidal and phagocytic power of the serum was tested for the malaria germ and the typhoid bacillus both in the animals and in clinical cases. The animals given the quinin (subcutaneous injection of 0.005 gm. per kilogram) lost weight or failed to take on weight in comparison with the controls. No influence could be detected on the bactericidal and phagocytic power of the serum, but the power of producing antitoxins seemed to be diminished, suggesting that prolonged administration of even these small doses of quinin might render the course of an infectious disease more serious and recovery more difficult. He cites in conclusion Serafini's remark that hygiene does not regard with approval any method of prophylaxis based on the introduction into the organism of any drug; it creates an abnormal, nonphysiologic condition, and is permissible only as a temporary expedient.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

The Causation of Sex. A New Theory of Sex Based on Clinical Materials. By E. Rumley Dawson, L.R.C.P., M.R.C.S., Fellow of the Royal Society of Medicine. Cloth. Pp. 196, with illustrations. Price, 6 shillings. London: H. K. Lewis, 1909.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Second Series. Vol. XIV. Q.—RZEHAK. Cloth. Pp. 829. Washington: Government Printing Office, 1909.

Those Nerves. By George Lincoln Walton, M.D., Consulting Neurologist to the Massachusetts General Hospital. Cloth. Pp. 202. Price, $1. Philadelphia. J. B. Lippincott Co., 1909.

Transactions of the American Urological Association. Sixth Annual Meeting, 1907: Seventh Annual Meeting, 1908. Edited by Charles Greene Cumston, M.D. Cloth.

Handbuch der Biochemie des Menschen und der Tiere. By Carl Oppenheimer, in Berlin. Installments 20 and 21. Paper. Price, 5 marks each. Jena: Gustav Fischer, 1909.

Sixteenth Annual Report on the Births, Marriages, Divorces and Deaths in the State of Maine. For 1907. Cloth. Pp. 191. Waterville: Sentinel Pub. Co., 1909.

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Original Articles

THE VALUE AND LIMITATIONS OF SALT-FREE DIET AND RESTRICTION OF FLUID IN NEPHRITIS *

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Whatever one says under this title must be said with some caution and with a right reserved to change opinion with advance in knowledge. Although nearly one hundred years have passed since the question of the nature of the toxic constituents of the urine was first submitted to experimental inquiry, it cannot be regarded as yet settled. We can not to-day name all the poisonous constituents of the urine. I am not going into the literature of this subject in this paper, because it is too voluminous, in many points contradictory in its findings and unsatisfactory in the conclusions reached. The following points seem to be fairly well established:

1. Urea and uric acid are not important constituents of the urine so far as their toxicity is concerned. I mean to say that neither of these can be regarded as the active agent in the causation of those symptoms that result from failure to function on the part of the kidney.
2. About 85 per cent. of the toxicity of the urine is due to its inorganic constituents, the most toxic of which is potassium chlorid.
3. There are present in normal urine certain organic poisons, the nature of which has not yet been ascertained.
4. Although the inorganic constituents, notably potassium chlorid, are markedly poisonous, they can not be regarded as standing in a direct causal relation to that complex of symptoms which we designate as uremia. A small fraction of a grain of potassium chlorid, as I have frequently demonstrated, injected into a ventricle of the brain of an animal, may cause prompt death, but neither the symptoms nor the postmortem findings are those of uremia.

Of one thing I feel quite confident, and that is in withholding salts from our nephritics we are not withholding the direct cause of uremia. The best that we can hope for in the use of a salt-free diet is to protect the kidneys by decreasing to a certain extent their labor and thus conserving their capacity as organs of elimination. The inorganic salts, and certainly the chlorids of sodium and potassium, are not, singly or combined, the active and direct cause of uremia. Any inorganic salt above that needed in the processes of metabolism is without benefit to the body and increases unnecessarily the stress of work thrown on the kidneys, and, when these are already diseased, it is in accord with good sense to lighten their burdens so far as can be done without danger.

There are some reasons for suspecting that the inorganic salts of normal urine, carrying about 85 per cent. of the toxicity of this fluid, and the organic constituents, carrying the remaining 15 per cent. of toxicity, partly neutralize each other. At least it has been repeatedly found that the ash of urine is decidedly more toxic than the whole urine. This fact has been observed by Bouchard, Stadthagen and others. I have repeated this test several times with the urine of both herbivorous and carnivorous animals, also that of man, and have invariably found it true. It has been suggested that it is due to the conversion of the chlorid into a more poisonous carbonate on incineration, but I have been unable to find any evidence of carbonate in the ash which I have injected, and it has occurred to me that possibly there may be some neutralization between the inorganic and organic constituents. This is a problem that seems worthy of more extended study.

There is evidence that an absolutely ash-free diet may soon disturb the health of a normal individual. Taylor[1] has prepared such food and used it himself. He says:

> "The symptoms were those of lassitude until about the sixth day, when I noticed a great deal of cutaneous irritation and generalized muscular twitching with excitation of the reflexes. The equilibrium of the entire system became disturbed; I lost the power of sleep; the irritability was extreme. At this time the acetone complex appeared apparently suddenly. I therefore realized that I was near the danger point, stopped the experiment, resumed ordinary diet and within a few hours after the ingestion of alkalis, the symptoms disappeared entirely."

This experiment was repeated on two men by Goodall and Joslin,[2] who failed to induce the acidosis experienced by Taylor. This matter also needs further study. In all of these experiments the amount of sodium chlorid in the daily urine diminished to about 0.2 gm.

In dogs long-continued feeding of a salt-free diet materially reduces the acidity of the gastric juice. So far as I know, no experiments along this line have been made on man. It has been repeatedly shown, however, that it is difficult and probably impossible to reduce the amount of salt in the living tissues below a certain, fairly well-defined minimum. Life is no longer possible when this reduction passes this point. The molecules of living cells do not function when the content of inorganic salt falls below this minimum, which varies in different animals and in the different organs and tissues of the same animal. Notwithstanding all the excellent work that has been done on metabolism, we are hardly warranted in making more exact or positive statements on this subject. It is generally held that the chlorids of the urine are not in organic combination, but, as I have stated, it has been repeatedly found that the ash of urine is more toxic than the whole urine. Moreover, single inorganic salts may be more poisonous when injected intravenously than mixtures of several salts. There are, therefore, reasons for suspecting that the inorganic constituents of the urine are not only in part neutralized by the organic, but also in part by one another. The fallacies of Bouchard's method of determining the toxicity of the urine has been repeatedly pointed out, and his conclusions can not be accepted as final. Besides, it should be evident that poisoning due to the retention of normal constituents of the urine and uremia are two quite distinct and different things. Many years ago Rees reported a case in which there was only one kidney, and, this becoming blocked by a calculus, there resulted complete anuria. The man died, but not from uremia. Cases of prolonged suppression have been repeatedly observed and, although these may terminate fatally, death is not due to uremia. In uremia the poison results from a radical change in metabolism, and the active agent produced is not one of the normal constituents of the urine. It is possible that protein sensitization may give us more exact information concerning the nature of the poison elaborated in uremia. But the one point that I wish to emphasize in this paper is that poisoning from anuria and uremia are two distinct things, and, while the inorganic salts are the most poisonous constituents of the urine, their retention in the body can not be regarded as the cause of uremia—certainly not the direct cause.

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Taylor: Tr. Assn. Am. Phys., 1907, p. 245.
[2] Goodall and Joslin: Tr. Assn. Am. Phys., 1908, p. 92.

In 1903 it was suggested by Widal that nephritic edema is due to chlorid retention, that with the disappearance of the edema the elimination of chlorid is increased, and that the proper treatment of the edema of nephritis should provide a diet that is largely salt-free. The reasoning in this statement seems to be good, but the experience of clinicians has not been so satisfactory as the earlier reports led us to expect. In Widal's first case the edema seemed to fluctuate directly with the amount of salt in the food and it was suggested that the milk diet, so long and favorably known in the treatment of nephritis, might owe its success largely to the fact that it contains only a small amount of sodium chlorid. Moreover, there is some clinical evidence that edema does increase the danger of uremia. At least uremic symptoms have been seen to disappear with the disappearance of edema and to return with the accumulation of fluid in the tissue. That there is a causal relation between edema and uremia does not, however, seem probable, because the latter is frequently seen in interstitial nephritis when the former is absent or but slightly developed. Edema in nephritis is due to diverse causes, and certainly not always to salt retention. In acute nephritis it seems to be due to the effect of the poisons on the walls of the vessels. In many cases of chronic nephritis, edema is due to circulatory disturbances and is best combated by agents directed to these causes. In amyloid nephritis it is again toxic. In a certain small percentage of cases of chronic parenchymatous nephritis the edema is apparently markedly influenced by the quantity of salt in the food, and it is in these that the best results are obtained by reduction of the salt in the food. Even in these the improvement is limited to the reduction of the edema. I do not deny that this is of sufficient advantage to be worth doing. It seems to me that the greatest good is to be secured by restricting salt in the food of those patients who may be called prenephritics. We frequently meet with patients of this kind. They are men and women past the prime of life who have been unduly energetic, often of good habits, with the exception of the tendency to overwork. The heart has been unduly taxed; they get out of breath easily; occasionally they grow dizzy. Blood-pressure is high. There may be a trace of albumin in the urine or the most careful and frequent examination may fail to show this abnormality. I am in the habit of advising patients of this class to have their food prepared without the addition of salt. I do this for the following reasons: 1. They can educate themselves to eat unsalted food. I am positive that we eat too much highly salted food. 2. With unsalted food they drink less. Vesicular fulness can be induced by water as well as by beer. 3. The kidneys are relieved of excessive work in eliminating excess of both salt and water. Otherwise I have never been satisfied that I have seen any benefit in any form of nephritis in denying the patient the satisfaction of his thirst.

Milk contains about 2 gm. of sodium chlorid per liter, and on an exclusive milk diet three liters per day supply the necessary calories for the average man. On such a diet the individual receives daily about 6 gm. of salt, and this seems to be all one needs in health or in disease. A mixed diet of unsalted meat, potatoes, bread, butter, fruit, sugar, cream or milk and coffee or tea of equal caloric value contains in the daily ration about 3 gm. of salt, and this may be increased by the addition of an equal amount if the taste is objectionable.

Time will not permit me to take up the interesting subject of the mechanism of nephritic edema, but I will call attention to a recent contribution to this subject by Bence,[3] who has shown that there is an increase in the volume of blood and edema appears in renal insufficiency even when there is no fluid taken into the alimentary canal; but, of course, both of these conditions are increased when much water is ingested. It seems only good sense, therefore, to limit the consumption of fluid in nephritis so far as possible without distress to the patient, but it should be understood that edema develops in experimental animals in which nephritis has been induced by the subcutaneous injection of uranium salts even when such animals are denied any fluid.

THE CAUSES OF HYPERTENSION IN NEPHRITIS *

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Of the causes of hypertension in nephritis we have no exact knowledge. The theories which have been elaborated are based mainly on deductions from clinical experience or to a slight extent on experiment. Neither the clinical experience nor the experimental evidence is at all conclusive; but each in its way points to an explanation through the action of some chemical substance influencing the circulatory system. What this substance is and how it acts we do not know.

Clinically we have the very important observation that hypertension and heart hypertrophy come in that group of renal diseases in which uremia is also prone to occur, while both fail in practically all other forms, as tuberculosis, pyonephrosis, hydronephrosis, cystic kidney and the kidney of acute sepsis. In other words, hypertension, like uremia, is an evidence of renal insufficiency. It is naturally suggested that the poison of uremia is identical with that causing hypertension, or, if different, is formed at the same time and due to the same causes; or possibly one is a derivative of the other as the result of some process of chemical disintegration. If the same poison, it is possible to conceive that in small amounts it affects the vasomotor apparatus (hypertension) and in large amounts exerts a toxic effect on the nervous system (uremia). Or, if two or more poisons are concerned, each may have special affinities.

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[3] Bence: Ztschr. f. klin. Med., 1909, lxxvi, 69.

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

In support of this chemical theory we have the frequent clinical experience that the degree of the uremic manifestations (headache, vomiting, unconsciousness) and the recovery from these have a close relation to the blood-pressure. Moreover, true uremia without hypertension seldom occurs.

In connection with this chemical theory or retention theory, the effect of diet also is suggestive. Experiments on patients with chronic nephritis have shown that rich protein diet increases tension and disturbs the general condition of the patient for the worse. Müller describes an individual in whom a change from milk and carbohydrate diet to rich meat diet caused pressure to rise from 140 to 190. Rich meat diet causes, in nephritics, headache, one of the earlest and most constant symptoms of uremia, and one which has a definite relation to hypertension.

All this probably means a retention of the products of nitrogenous metabolism, and possibly of that nitrogen which in the urinary partition is known as "rest" or undetermined nitrogen. The increase of these substances in the blood of that group of renal diseases in which uremia occurs suggests that not only may they be the cause of uremia, but that among them may also be the substances responsible for the increased tension. Aside from this theory, which attempts to explain clinical observation, we can at present add nothing to the view that hypertension is to be explained by retained products of metabolism.

Another view, which I think we can dismiss briefly, is that of the internal secretion of the kidney. This is based on Tigerstedt's observations that extracts of rabbit's kidneys contain a pressor substance, which substance Forlarini and Riva-Rocci consider may be increased in diseased kidneys. Little evidence has been brought forth to support this theory, and the most recent study, that of Pearce, was entirely negative in its results.

Another closely related theory is that which assumes a correlation between the kidney of chronic interstitial nephritis and the secretion of the adrenal. This theory was advanced by French investigators, led by Vaquez, three or four years ago. They describe a localized or diffuse hyperplasia of the adrenal accompanying chronic nephritis in those cases which do not run too rapid a course. This hyperplasia is considered as an indication of the hyperactivity of the functions of the gland; that is, essentially a condition of hyperadrenalism. Naturally the theory has a relation also to the arteriosclerosis associated so constantly with the interstitial type of nephritis. Although the correspondence between the renal lesion and the hyperplasia of the adrenalin is very suggestive and the occurrence not infrequent, there is some doubt as to the interpretation. Several German investigators, and in this country, Pearce, ascribe the anatomic changes in the adrenal, in part at least, to the influence of the local nutritional disturbances caused by local arteriosclerosis. As reports multiply, and the lesions are found in other conditions than "contracted" kidney, the importance of the observation diminishes.

Of interest in connection with the theory just described are the attempts to demonstrate adrenalin or adrenalin-like substances in the serum of nephritics. This work is based on Meltzer's observation that adrenalin causes dilatation of the pupil of the frog's eye. According to Ehrmann, the method is sufficiently delicate for the detection of adrenalin in dilution of 1 to 1,000,000. Clinically the method is associated with the names of Schur and Wiesel, who found that the serum of patients with chronic nephritis caused almost uniformly mydriasis of the enucleated frog's eye. The serum of normal individuals and of individuals suffering from other diseases failed to produce the same results. Several observers have confirmed these results, but there is some dispute as to whether or not the action is due to adrenalin. That it is, is denied by Schlayer, on the basis of his work with the "vessel-strip" method, which gives positive results with normal serums and no different results with nephritic serums. Be this as it may, no explanation of the presence of the mydriatic body is at hand unless it be that of the French investigators and that, we have seen, is hardly satisfactory. More evidence must accumulate before a definite opinion as to the value of these observations can be reached.

As is well known, the chief difficulty in explaining hypertension in chronic interstitial nephritis is the almost constant presence of arteriosclerosis. The absence of definite knowledge of the sequence of events makes the problem a complicated one. It is still a question whether the kidney injury is primary and leads to arteriosclerosis as the result of a hypertension of renal origin, or whether a poison first affects the blood-vessels, and the kidney secondarily through the disease of its own arteries. The latter view appears to be the one gaining adherents, but it is well to remember in this connection that many poisons may simultaneously affect the kidneys and the vascular system.

On this general subject some light has been thrown as the result of the study of renal diseases following infectious diseases, in which hypertension appears to be primary and the heart hypertrophy and arteriosclerosis secondary. The hypertension associated with the glomerulonephritis of scarlet fever is of peculiar interest. Usually one thinks of hypertension coming on gradually in the course of a chronic disease, but in scarlatinal nephritis it may develop very early (Mahomed and Müller); indeed, in the course of a few days. Here certainly heart hypertrophy or arteriosclerosis can be ruled out, for in scarlet fever four weeks at least are necessary for hypertrophy (Müller) and the scarlet fever age is not that of arteriosclerosis. For such an early hypertension the only explanation which can be offered is increased peripheral resistance—a contraction of arterial terminals—as the result of some chemical influence; but this brings us again to the theories discussed above, concerning which we could come to no definite conclusion.

The frequency of the association of glomerular lesions with hypertension is of considerable interest. Schmidt, working with Krehl's material, has emphasized this relation and A. Loeb holds that heart hypertrophy occurs only in those forms of nephritis in which the glomeruli are diseased and in large part impermeable. He points out that in the forms of nephritis with degenerative epithelial lesions only, hypertension does not occur; it is peculiar to scarlatinal nephritis and contracted kidney.

This is an important field for investigation: first, as to tension in various *forms of epithelial* lesions, especially those of the acute infectious diseases; and, second, a cooperation between the clinician and the pathologist as to the relation of hypertension to histologic changes, with special regard to the glomeruli.

Experiments definitely demonstrate that the high pressure associated with glomerular lesions can not be explained by the earlier theory of diminution of vascular territory in the kidney. Loeb offers the following hypothesis:

Since the renal activity varies directly with the blood-supply, lesions of the glomeruli would limit local vasodilatation. When the renal activity demands more than the local conditions allow, the stimulus goes beyond the kidney and there is exerted reflexly a splanchnic contraction which leads to an increased systemic tension and then an increased flow of blood through the glomeruli.

This explanation, hypothetical as it is, brings out very prominently the fact that hypertension, be its cause what it may, is essentially a conservative process having for its object the maximum functioning power of the kidney.

Passler and Heineke have attempted to explain the problem by reducing the kidney substance of animals by successive excisions. They found that after two-thirds to three-fourths of kidney was removed a certain proportion, about 25 per cent., of the animals developed a permanent increased tension with heart hypertrophy. In such animals it was also observed that arterial spasm with a further rise of pressure quickly followed certain stimuli which in normal animals would produce little effect.

They conclude that in the state of renal insufficiency so produced the heart hypertrophy is due to the increased work resulting from the tendency to arterial spasm and that this in turn is due to the effect of retained toxic substances.

So again we come back to the chemical theory of retention—all theories except that of vicarious adrenal secretion return to this point—but of the substances "retained" we know nothing. Herein is the problem of the "causes of hypertension in nephritis"—a problem to be solved only by the methods of chemistry and physiology directed by careful clinical observation.

P. C. Janeway (Prof. Soc. Exper. biol. and Med., 1909, vi, 108-109) has furnished a brief account of a study of the blood pressure in dogs with insufficient kidney substance. Instead of excising a portion of the kidneys he caused destruction by ligating some of the branches of the renal arteries. Also, instead of studying the pressure by direct measurements from the carotid, he modified the Riva-Rocci cuff so that the clinical method of taking blood pressure could be applied to the dog. Thus observation could be made from day to day with a limit of error of only 10 to 15 mm. Hg. I have found that a decided increase of blood pressure occurred after destruction of kidney substance by ligating. Thus in one animal, with an average pressure before operation of 90 mm., a rise to an average of 125 occurred after 100 days; and in another a rise from 117 to 150 mm. occurred after only 35 days. Janeway does not discuss the mechanism by which the hypertension develops.

Note.—I gratefully acknowledge my use of the literature of this subject as summarized by the following writers:

Müller, F.: Morbus Brightii. Verhandl. d. deutsch. path. Gesellsch., 1905, ix, 64.

Janeway, T. C.: The Clinical Study of Blood-Pressure. D. Appleton & Co., 1904, New York.

Pearce, R. M.: The Theory of Chemical Correlation as Applied to the Pathology of the Kidney. Arch. of Int. Med., August, 1908.

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CLINICAL VALUE OF RECENT STUDIES IN EXPERIMENTAL NEPHRITIS *

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A symposium on nephritis at the present time quite fittingly is opened with a reference to the results of recent work in experimental nephritis. This, however, is not the case so much because the results as yet are of very great importance, but rather because it seems likely that the experimental method applied to the study of nephritis will in the future throw much light on the problems of the disease.

The history of the study of nephritis is not long. With Bright in 1827 begins our accurate knowledge. He it was who linked together in causal relation the symptoms, albuminuria and edema, and the lesions in the kidney. Keen observers added fact after fact for fifty years and more. Technical improvements widened the field of observation, so that a period, which we may arbitrarily end in the early part of the present decade, had contributed much to our knowledge of nephritis through the work of pathologists and clinicians. Yet our knowledge remained largely a knowledge of results rather than a knowledge of causes and progressive development, and many were the gaps in our knowledge, great the discrepancies between clinical observation and postmortem finding. In the present decade the experimental method has been applied increasingly in the study of disease in the hope that by it our knowledge of the life-history and causes of disease might be extended. Nephritis has been studied in this way and certain results have been obtained.[1]

I am not asked to review the numerous experimental studies of nephritis that have been published in recent years, but to indicate what clinical bearing, if any, this work has. If we turn to nephritis in man, we find the following phases of the disease of much clinical interest: the urinary changes, particularly the albuminuria and cylindruria, the uremia, the edema, the hypertension and associated cardiac hypertrophy, and, finally, the cause and the cure. Do our studies of experimental nephritis help in a better understanding of any of these? To answer this I will consider these points in the order named.

URINARY CHANGES

There has been a very general consensus of opinion with regard to albuminuria in nephritis. The albumin of the urine, in very large proportion, comes from the soluble proteids of the circulating blood and appears in the urine as a result of a pathologically increased permeability of the glomerular tuft. Degeneration of the epithelial cells of the tubules may have a small part in producing the condition. Experimental work confirms this view.

Cylindruria has received two interpretations. One of these assumes that the albuminous material constituting the cast arises from the albumin of the blood, which, after excretion through the injured glomerulus, becomes changed in physical properties so as to fuse together into a homogeneous coagulated mass, a cast. The other theory assumes that the albuminous material of the cast is derived from the albuminous material of the epi-

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Christian: Experimental Nephritis (a review of recent literature), Boston Med. and Surg. Jour., 1908, clviii, 416, 452.

thelium lining the tubules, which becomes fused together and more or less homogeneous so as to make up a cast. This latter theory does not assume that there has been any very great change in the physical composition of the albuminous material between its cell origin and the cast, since cells and casts present in the urine show many identical physical properties.

The origin of urinary casts has been studied in nephritis produced experimentally. A variety of irritants, such as cantharidin, corrosive sublimate, uranium nitrate, potassium bichromate, etc., when given to animals, will produce changes in the kidney leading to the appearance of albumin and casts in the urine. Wallerstein,[2] among others, has conducted such experiments and concludes that all casts are formed from degenerated, disintegrated and metamorphosed tubular epithelium. Ribbert[3] and Schlecht,[4] on the other hand, studying the excretion of carmine through the kidney, have concluded that the hyaline casts are derived from the albumin excreted through the glomeruli, while the granular casts are derived from tubular epithelium.

In our laboratory at Harvard this subject has been investigated by Dr. R. M. Smith,[5] who employed rabbits and used a variety of irritants. Roughly, the irritants used may be divided into two groups: those which produce extensive changes of a degenerative character in the tubular epithelium (uranium nitrate, potassium bichromate and mercuric chlorid), and those which, [illegible] idence of acute nephritis, produce [illegible] changes in the tubular epithelium (cantharidin and arsenic). By varying the size of the dose of these irritants, by varying the number of doses, by varying the time interval between the doses, by varying the length of the experiment, which ends either in the spontaneous death of the animal or in killing the animal, it is possible very largely to control the lesions, and in this way there comes a manifest advantage in the experimental method as compared with a study of postmortem lesions in man.

It was found in this work that the irritants which produced marked degenerative changes in the epithelium of the tubules gave rise to a more abundant cast formation than did the other group of irritants. The urine of the animals employed, rabbits, was collected and the number and character of the casts was studied from time to time. By those irritants which produce most marked degenerative changes of the epithelium of the tubules most casts are produced, indicating that there is a close association between changes in the epithelium of the tubules and cast formation. By studying histologically kidneys of animals receiving different irritants in varying dosage, cast formation could be traced morphologically. The first change seems to be a granular degeneration of the epithelium lining the distal convoluted tubules, which increases in severity until the epithelium becomes converted into a granular material more or less completely filling the space bounded by the basement membrane of the tubule. This granular material is composed of remains of both cytoplasm and nuclear material. While this process is going on, fluid is presumably excreted through the glomerulus, so that there is a current of excreted fluid along the tubules which washes this granular material into the lower levels of the tubules. Toxic substances used in this way cause very slight degenerative changes in the epithelium lining the collecting tubules, and so the granular material washed down in the collecting tubules comes in contact with quite normal epithelium. In this process of passing along the tubule the granular material seems to become fused into plugs molded by the shape of the collecting tubule, and by the time the mass reaches the hilum of the kidney it is a well-fused granular plug, which floats out into the urine as a granular cast.

In the earlier stages of the process, urine analysis shows the presence of a number of casts, at first coarsely granular, later more finely granular. With a longer interval, or with a less intense local process, urine analysis shows casts more hyaline in character, and the sections from the corresponding kidneys show that in the lower levels of the tubules there are present plugs varying in homogeneity, and always in the older processes being quite distinctly hyaline. Even in the very chronic lesions, application of appropriate staining methods shows in these very homogeneous, hyaline, highly refractile casts the presence of numerous granules staining in every way identically with the granules that are in renal epithelium. So that from a morphologic point of view, supported by the results of urinary analysis, it would seem that both granular and hyaline casts in these animals arise from degenerative processes in the epithelium, and that the granular casts come early, the hyaline casts late, that there is a progressive transformation between granular and hyaline casts, and that granular casts appear to be formed quickly and excreted early, while hyaline casts are formed slowly and excreted late. These observations on animals are in harmony with the observed conditions in man, and would satisfactorily explain cast formation in most cases, though possibly not in every case.

Cast showers are occasionally observed in man. Experimental study has given some explanation of this. In Mackenzie's laboratory in Toronto[6] it has been found that in experimental nephritis, if, at a time after the casts have very largely ceased to appear in the urine, the renal artery is dissected out and physiologic salt solution is irrigated through the kidney under some pressure, a certain amount of fluid will be excreted through the ureter, and this will be found to contain a very large number of casts, largely hyaline in character. It would seem that, with a cessation of the active process, casts that have been formed have remained stored in parts of the tubules and gradually become hyaline in character; with increased flow of fluid through the renal vessels these will be washed out in large numbers. A similar acceleration of renal circulation with accompanying diuresis would in man similarly flush out a large number of casts and produce cast showers.

UREMIA

A number of theories have been advanced to explain the condition of uremia. Most of these assume the presence in the body of the nephritic of some toxic substance which, accumulating up to a certain point, produces the symptoms which we know as uremia. Attempt has been made experimentally to produce a similar condition in animals by means of nephrectomy, by ligation of the ureters, and by the administration of various irritants. In this way toxic conditions undoubtedly are produced which have some analogy to uremia in man, but the recognition in animals of symptoms, which may be regarded as truly uremic in the sense of this condition in man, is so exceedingly difficult that at the present time no great advance has been made, and it cannot be said that studies of experimental nephritis have thrown much light on the condition of uremia beyond giving support to the view that the condition is a toxic one associated with renal lesion.

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[2] Wallerstein: Experimentelle Untersuchungen über der Enstehung der Harnzylinder, Ztschr. f. klin. Med., 1906, lviii, 296.

[3] Ribbert: Die Abscheidung intravenös injiziertes gelösten Karmins in den Geweben, Ztschr. f. allg. Physiol., 1904, iv, 201.

[4] Sch[illegible] en über der Resorption und der [illegible] etc., Beitr. z. Path. Anat., etc [illegible]

[5] Smi[illegible] n Experimental Study, Boston M[illegible] 54.

[6] Unpublished Experiments Reported by Mackenzie at the Meetin of the American Association of Pathologists and Bacteriologists, held in Boston, April 9 and 10, 1909.

EDEMA

From the earliest period of the work on nephritis the relation of edema to nephritis has been the subject of much discussion and investigation. The attempt of morphologists to correlate edema with certain types of renal lesion has been only very partially successful, and morphologic studies have yielded no explanation of the occurrence of edema. In recent years physicochemical methods have been applied and especial emphasis has been placed on salt retention with corresponding changes in osmotic tension. Analyses of food intake and urine output with respect to sodium chlorid seemed to show that in cases of nephritis with edema there was a deficient salt excretion and that the edema fluctuated in proportion to the salt intake. Widal and a group of French observers[7] have placed particular emphasis on salt-free diet as a means of controlling nephritic edema. A critical review[8] of the whole subject of the salt retention theory, however, seems to show that it is insufficiently supported. A considerable amount of experimental work is rather against it. Acute toxic nephritis in which there is no hydrops can be produced by various substances, and in these animals salt retention may take place. On the other hand, with uranium nitrate nephritis is produced in which edema is often present without there being any more salt retention than occurs in other types of toxic nephritis without edema. Recent careful clinical studies of Bittorf[9] and of Blooker[10] have failed to show any close relation between salt retention and edema. Renal cases without edema may exhibit a marked decrease in power to excrete ingested salt.[11] There is then undoubtedly a growing skepticism toward salt retention as a primal cause of nephritic edema, though in many cases it may be a contributing factor, and the withholding of salt from the food may be therapeutically effective. Many failures from this form of treatment, however, show its limited applicability.

On the other hand, there is increasing evidence to show that peripheral vascular lesions play a large rôle in the production of edema. This is not a new theory, but was advanced in 1877 by Cohnheim and Lichtheim[12] and more recently has been supported by Senator. It presupposes the presence in the circulating blood of some toxic substance capable of injuring the vessel wall. Some evidence of the existence of such a toxic substance is found in the experiments of Heineke,[13] Meyerstein[14] and Blanck.[15] These experiments were as follows: It is known that subcutaneous injections of uranium nitrate in rabbits will produce a toxic nephritis usually with edema, whereas other substances may be used to produce nephritic changes without any associated edema. Now if blood serum obtained from rabbits of the first group be injected into rabbits of the second group, edema appears, whereas normal rabbit serum produces no such result. Experiments of this kind are not constant in their results, but at least they are very suggestive of the importance of the rôle of circulating toxic substances in producing nephritic edema.

Pearce[16] has recently added further evidence in favor of the rôle of peripheral vascular lesions in the production of edema by a group of experiments in which he used known renal irritants and substances which are known to produce degenerative changes in the bloodvessels. Snake venom is such a vascular poison, and when given in association with a renal irritant edema results in a considerable proportion of the animals, particularly when moderately increased amounts of water are given by mouth, whereas the same treatment without the use of the vascular poison rarely results in edema. The functional studies of Schlayer, Hedinger and Takayasu[17] show that there is a close relation between the functional renal vascular disturbance and the edema.

Further evidence in support of the part played by vascular lesions in the production of nephritic edema is given by the results of my own histologic studies,[18] in which, in an examination of the kidneys of rabbits after the use of various renal irritants, I have found quite constantly associated with uranium nitrate lesions a change in the walls of the vessels of the glomerular tuft, consisting of the appearance in them of numerous hyaline droplets demonstrable by special staining methods. This vascular lesion was not found in kidneys of animals receiving substances other than uranium nitrate, and, as the uranium nitrate is the substance which produces in rabbits edema much more constantly than any other substance, it may be inferred that there is some relation between this anatomic lesion and the occurrence of the edema.

It cannot be claimed that the evidence is complete, but so far as the results of experimental work go it is very strongly suggested that the edema in nephritis results from injury to the peripheral vessels associated with changes within the kidney, probably in large part vascular also. Accepting this evidence, it is not surprising that there is no strict correspondence between the occurrence of edema in man and a definite type of anatomic lesion in the kidney. It is conceivable that various anatomic lesions under certain circumstances might lead to the production of functional disturbances in the kidney resulting in the retention or formation of toxic substances, which would injure the vascular apparatus and lead to edema formation, or it is possible that the same toxic substance which produces the renal lesion also is the cause of the vascular lesion. Much more experimental work, however, is necessary finally to determine the cause of edema.

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[7] Widal: La cure de déchloruration, Bull. et mém. Soc. méd. d. hôp. de Paris, 1903, xx, 990.

Widal, Froin and Digne: La chloruration et la régime dé chloruré chez les cardiaques, Soc. méd. d. hôp. de Paris, 1903, xx, 1208.

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Widal and Lemierre: Pathogénie de certains œdémes brightiques; action du chlorure de sodium ingéré, Bull. et mém. Soc. méd. d. hôp., 1903, xx, 678, 785.

Widal and Others: Les régimes déchlorurés, Eighth French Cong. Int. med., Liege, Sept. 25-27, 1905, Sem. méd., 1905, xxv, 469.

[8] Georgopulos: Experimentelle Beiträge zur Frage des Nierenwassersucht, Ztschr. f. klin. Med., 1906, xl, 411, and other similar papers.

[9] Bittorf: Zur Pathologie des Wasserund Salzstoffwechsels, Deutsch. Arch. f. klin. Med., 1908, xciv, 84.

[10] Blooker: Ueber den Einfluss der Kochsalzzufuhr auf die nephritischen Oedeme, Deutsch. Arch. f. klin. Med., 1909, xcvi, 80.

[11] Ambard and Beaujard: La rétention chlorurée sèche, Semaine méd., 1905, xxv, 133; and other observers.

[12] Cohnheim and Lichtheim: Ueber Hydrämie und hydrämische Oedeme, Virchows Arch. f. path. Anat., 1877, lxix, 106.

[13] Heineke: Diskussion, Verhandl. d. deutsch. path. Gesellsch., 1905, ix, 107.

[14] Heineke und Meyerstein: Experimentelle Untersuchungen über den Hydrops bei Nierenkrankheiten, Deutsch. Arch. f. klin. Med., 1907, xc, 101.

[15] Blanck: Experimentelle Beiträge zur Pathogenese der Nierenwassersucht, Ztschr. f. klin. Med., 1906, lx, 472.

[16] Pearce: The Theory of Chemical Correlation as Applied to the Pathology of the Kidney, Arch. Int. Med., 1908, ii, 77; and unpublished experiments reported at the meeting of the American Association of Pathologists and Bacteriologists, held in Boston, April, 9 and 10, 1909.

[17] Schlayer, Hedinger and Takayasu: Ueber nephritische Oedeme, Deutsch. Arch. f. klin. Med., 1907, xci, 59.

[18] Christian: A Glomerular Lesion of Experimental Nephritis, Boston Med. and Surg. Jour., 1908, clix, 8.

HYPERTENSION AND ASSOCIATED CARDIAC HYPERTROPHY

Chronic nephritis is generally recognized as one of the common causes of high blood-pressure and associated cardiac hypertrophy, and a number of theories have been advanced in explanation of this condition. Some of these have been submitted to experimental test. Pässler and Heincke[19] have found that there is an increased blood-pressure and cardiac hypertrophy following the removal of considerable portions of the kidney substance, though these results were not constant. Janeway[20] has obtained similar results, though it is not very clear in just what way the blood-pressure is raised. Another group of observers have believed that the internal secretion of the kidney was a factor in raising the blood-pressure, and adduced in favor of this the fact that injections of extracts of kidney produced a rise in blood-pressure. A critical review of this work has been made by Pearce[16, 21] with additional experiments of his own, and he finds that results are very inconstant, and that the extract of the kidney of one animal may act in just the opposite way to the extract of the kidney of another species; consequently it is not believed that internal secretion in this sense can play very much part in producing hypertension. In the blood serum of animals receiving doses of certain substances that produce renal change there may be particular substances which have a pressor action. However, this type of work experimentally so far has been confined to acute conditions, though in man suffering from chronic nephritis numerous reports have been made indicating that there are substances in the circulating blood capable of acting to raise blood-pressure, but here again more recent reports give conflicting results, and probably not a very great amount of importance can be attached at the present time to these as factors in causing hypertension.

In a certain number of experiments in which the successful production of chronic renal lesions[22] has been attained, there is evidence of cardiac hypertrophy, and further studies along this line may yield results of importance. Since at the present time we have several experimental ways of producing cardiac hypertrophy, it may be possible to unravel the cause of this condition in nephritis. As shown by Fleisher and Loeb,[23] spartein and adrenalin chlorid will lead to the production of myocarditis with cardiac hypertrophy, and a moderate number of experiments in our laboratory have shown that the myocardial lesion in this condition as well as the findings in the kidney are quite different from those in a few animals where a type of chronic experimental nephritis has resulted from repeated injections of uranium nitrate, and in neither one of these groups of animals do we find the type of vascular lesion that Klotz[24] has obtained in Montreal by his method of increasing intravascular tension by inverting rabbits, from which procedure a marked degree of arterial change with dilatation of vessels is developed in the arteries of the anterior half of the body, associated with cardiac hypertrophy. Since these various experiments suggest that we can experimentally control the production of cardiac hypertrophy and obtain the result by producing chronic renal lesions, chronic myocardial lesions and chronic vascular lesions, it may be possible by such studies to arrive at the causal factor chiefly acting in any one of these types.

CAUSE AND CURE

As yet too little work has been done for the studies in experimental nephritis to throw much light on the etiology and treatment of nephritis. It is in the chronic nephritis that least is known about cause and cure. Experimental results in the production of chronic nephritis have been inconstant, and by nature such experiments are difficult. The repeated injection of various irritants has resulted in a certain number of cases in the production of lesions fairly analogous to the chronic renal lesions that we find in man. In animals, however, the remarkable recuperative power of the kidney makes the production of chronic lesions very difficult. Still, so far as results have been obtained, they suggest that in many cases chronic lesions in man result from continued action of small amounts of toxic substances, but throw no light on the cause of the appearance of these substances. Lead salts are about the only substances used experimentally which could in any possible way be similarly active in man, and it is not conceivable that lead-poisoning is a factor in the production of many cases of chronic nephritis. Some experiments seem to show that a single very extensive degenerative process in the kidney may result in the production of chronic lesions; and it may be that a few cases in man result in this way, just as at present it is believed that certain cases of cirrhosis of the liver are the result of some single acute degenerative process. Very little light so far has been thrown on the etiology of nephritis by experimental methods, however, and no assistance in the cure and prevention has been given.

It is evident from this review of experimental nephritis that the work has been just begun. It is being carried on at the present time in many laboratories, and we should take courage in the belief that from these experiments much of direct clinical value will come, and that by it our knowledge of nephritis in man will eventually be considerably widened.

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[19] Pässler und Heineke: Versuche zur Pathologie des Morbus Brightii, Verhandl. d. deutsch. path. Gesellsch., 1905, ix, 99.

[20] Janeway: Unpublished experiments reported at the Meeting of the American Society for the Advancement of Clinical Investigation, held in Washington, May 10, 1909.

[21] Pearce: An Experimental Study of the Influence of Kidney Extracts and of the Serum of Animals with Renal Lesions on the Blood-Pressure, Jour. Exper. Med., 1909, xi, 430.

[22] Christian: Unpublished and incompleted experiments made in the Laboratory of the Department of the Theory and Practice of Physic at Harvard Medical School.

[23] Fleisher and Loeb: Experimental Myocarditis, Arch. Int. Med., 1909, iii, 78.

[24] Klotz: Experimentelle Arbeiten; Arteriosklerose, Centralbl. f. allg. Path. u. path. Anat., 1908, xix, 535.

Acute Cerebral Tremor in Young Children.—J. Zappert contributes an article on this subject in the *Monatsschrift für Kinderheilkunde*, viii, 133, 1909, reporting four cases personally observed, and tabulating fourteen others from the literature, all in infants less than 2 years old. His conclusions are that some anatomic lesion must be assumed in every such case, and that the idea of a toxic neurosis must be given up, at least so far as children are concerned. It is evident that transient changes in the meninges and cortex are a frequent accompaniment of infectious processes in children. As a rule they subside without inducing any clinical manifestations, or merely a mild general affection whose cerebral origin it is difficult to determine. This last category includes the cases of tremor under discussion. It is possible that autotoxins or infections may induce changes in certain brain centers, entailing the tremor. The latter is thus the expression of a toxic-infectious injury of the brain. Complete recovery was observed in all but two of the cases cited, the children in these two cases growing up imbeciles

MANAGEMENT OF UREMIA *

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For the purposes of this discussion, uremia may be tentatively defined as an autointoxication, which affects mainy the nervous system, and occurs in connection with renal insufficiency. It is due to the retention in the blood, tissue lymph and cells of the body of certain indeterminate, but specific, products of perverted, or normal, tissue metabolism, which are not excreted by the inadequate kidneys, or are not taken up by the lymphatic radicles, or are not neutralized or destroyed by the lymphatic glands or other protective organs.

We are lacking in knowledge regarding many of those fundamental facts of anatomy, physiology and pathology which are necessary for formulating a specific treatment for uremia; therefore, that which is offered should be considered as being based on a fairly rational empiricism, directed in the main toward the prevention and relief of prominent symptoms and known conditions.

In order that my remarks may not lack in directness and force by a discursive rambling over too broad a field I shall confine myself to a consideration of some of the problems in the management of uremia, with particular reference to the disturbances of the intravascular and extravascular circulation, in that protean malady technically known as chronic interstitial nephritis, as they have been encountered in my personal experience.

Fairness impels me to say that the exigencies of this occasion renders it impossible to give consideration to the many interesting features connected with the treatment of such strikingly important symptoms as convulsions, coma, Cheyne-Stokes respiration, mental aberration, etc.

On making a diagnosis of chronic interstitial nephritis the physician should make earnest efforts toward preventing the development or recurrence of recognizable uremia. The patient should be informed of the nature of the disease, and given a tactful prognosis and directions for its management as to diet and general regimen. The diet should be individualized and specifically prescribed; it should be so arranged, along the ordinary established lines, as to maintain nutritive equilibrium at the highest possible level, with the smallest total amount of proteid and carbohydrate foods. The total liquids should be so adjusted as to carry off the largest amount of excrementitious materials, as may be determined from time to time. The regimen should consider such important matters as residence, clothing, occupation, exercises, environment, etc. The amount and character of the physical exercises must be adjusted to meet varying capacity and requirements. Extraordinary care should be taken to avoid infectious diseases. The patient should be seen with such frequency as to allow the physician to keep closely in touch with his ailments. At these times modern methods of examination should be the rule. The patient should consult his physician promptly on the advent of any one of a series of significant symptoms, a list of which he should have. The physician should be intelligent, alert, assiduous and tactful; in every legitimate manner he should endeavor to obtain and retain the confidence of his patient, solely because it is to the latter's best interests.

Mention is frequently made of the sudden and unexpected onset of uremic manifestations; but we may well inquire whether this is often really without warning. Looking back over my experience, I recall several instances in which an uremic attack was ushered in with a celerity which was, at the time, truly surprising; yet when these cases are reviewed in retrospect none was without ample symptomatic warning. Certain it is that when excessively high blood-pressure, various dyspneas, edema, transient blindness, retinitis and retinal detachments, dizziness, headaches, neurites, drowsiness, impairment of the sense of location, mental perversions, tremor and cramps, aphasia and fleeting paralyses, cardiac enlargement and insufficiency, vomiting and diarrhea, cutaneous affections, etc., thrust themselves, singly or in groups, obtrusively before us, we should appreciate their diagnostic significance.

As is well known, the blood-pressure is abnormally high in these cases. Perhaps the dietetic and other measures instituted may limit, or possibly prevent, further advances along this line. Rarely, as time passes, the vasomotor nerves so accommodate themselves to the unknown irritant that the circulatory balance is adjusted in such manner that the blood-pressure remains stationary, or even declines somewhat; and this without notable cardiovascular failure. The exalted cardiovascular tension may be somewhat reduced by various medicaments, as, e. g., hippurate of ammonia, lichenin, the nitrites, the iodids, thyroid extract, etc. The clinician must decide whether any measures should be taken to bring about this result; and, if so, under what circumstances, and by what means. Ordinarily the high tension is conservative and should not be interfered with. In some instances, however, there occurs a rapid rise of pressure above the patient's usual high level, with increase of the hazards accompanying this abnormal state. These sudden exaltations of tension are often followed by failure of the delicately balanced cardiovascular-areolar tissue supporting tension. Under these circumstances, with the patient in great distress, rupture of degenerate vessels threatening, and a practical certainty that circulatory incompetency will soon occur, I am of the opinion that the patient's best interests are served by anticipating the near-inevitable by artificially lowering the excessive pressure—if this can be effected. If the condition is urgent a free blood-letting should be done; otherwise one of the slower methods may be chosen. In this manner the patient is given the greatest relief, and imminent danger averted; but the underlying conditions remain, and the physician should not be lulled into a sense of security, as the patient is likely to be, by the ease and comfort which is now his. Experience proves that, once lost, the complicated circulatory balance is seldom fully and permanently restored. Not infrequently circulatory insufficiency follows an acute infection, or other depressing influences, without the patient experiencing the extreme tension referred to. In such cases the hypertrophied heart dilates, valvular incompetence may be added and the well-known results of cardiac failure appear, possibly to an overshadowing degree. In this connection especial consideration should be accorded to the overfilling of the lymph spaces, and the subsequent failure of the areolar tissue-lymph tension, with edema as the final result.

The rôle of edema in the genesis of uremia is most important, although it will be practicable, in this paper, to note only some of the most significant features. Thus, in many cases, without gross evidences of edema, the intercellular and areolar tissue spaces become distended with lymph to a degree which induces a high tension.

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

The patient is plump; the soft parts are resistant to pressure, but without pitting; the integrity of the areolar tissues as a series of restraining membranes is maintained; anasarca is not present, but is imminent; the condition might be termed occult edema. Under these circumstances the lymph circulation is impeded, and toxic waste products and specific toxins begin to accumulate, with uremia probably in its incipiency. Edema in chronic interstitial nephritis is usually of the incipient or occult variety, and infrequently does it become obtrusive; general anasarca is rare in uncomplicated cases; when dropsy becomes a prominent feature it is due to cardiac incompetency, and partakes of the general character of cardiac dropsies, with one important and fundamental exception, i. e., that the patient is more or less uremic. The bearing of this distinction on our conception of the essential nature of uremia should be given full weight. Thus it follows, logically, that, inasmuch as the physical conditions are alike, the uremia of the cardionephritic dropsical patient is due to vital, and not to mere mechanical disturbances. It is significant that, in my limited experience, the serum obtained from the liquid bowel movements of such nephritic patients has been much more heavily laden with chlorids, and often with sulphates also, than in others with pure cardiac dropsies.

Edema interferes greatly with the composition of the blood and the extravascular lymph, and with cellular nutrition. The capillaries and lymphatic radicles are compressed, with interference with their functions; the tissue lymph becomes stagnant and laden with specific toxins and tissue-waste materials; the extravascular circulation is short-circuited. There is an extraordinary lack of easily obtainable information concerning the physiology and pathology of the circulation of the tissue lymph. For our purposes let it be assumed that the nutritive elements of the blood, proteid and other, in aqueous solution, are transfused through the capillary walls by selective vital cellular action, assisted by simpler mechanical forces; that the extravascular lymph, carrying both nutritive and waste materials, circulates, vitally and mechanically, in the intercellular channels and areolar tissue storage spaces, and by a selective excretory function of the cells of the lymphatic radicles, finds its way into the ducts and thence through the glandular protective filters into the blood current.

In my opinion, special consideration should be accorded the management of every degree of edema—occult as well as manifest—in nephritics. As the result of long-continued and fairly broad observation I commend the following plan of treatment, modified to meet varying and individual conditions:

During the first day the diet should consist of thin gruels, cream and water, vegetable soups, tea, coffee, cocoa, water and carbonated waters. From these there should be omitted the gruels on the second, and soups on the third day; during the fourth and fifth days very little should be taken; on the sixth day the soups should be replaced, and on the seventh day the gruels; later the ordinary careful dietary of the nephritic should be gradually resumed. Every night of the first three days the patient takes 10 grains of mercurial mass, in two recently made pills of 5 grains each, followed by an efficient sodium or magnesium saline in the morning. Beginning on the fourth morning, after free action of the saline, there is given 1/30 grain pure elaterin hourly for three doses; 1/24 grain every two hours for three doses; finally 1/18 grain every three hours until ten or twelve copious watery bowel movements have been induced. During the last series of doses the intervals may well be p. r. n., or as specially directed. Subsequent to the discontinuance of the medicine there will be several more of the liquid evacuations. The elaterin must be pure, and it is preferably given in powder, with sugar of milk and finely powdered ammoniated glycyrrhizin. During the time the elaterin is being given the patient should remain in bed, using the pan. He should be informed of the abdominal distress, nausea and vomiting which the drug sometimes induces. Without giving reasons for the opinion I am quite sure that, if satisfactory results are to be secured, it will be well to follow closely the spirit of these suggestions in regard to diet, medicine and general regimen as detailed.

The treatment here recommended will usually drain from the bowels a considerable amount of serum, varying in total volume from 4 to 15, or more, pints. The serum is usually acid; straw-colored; of from 1005 to 1030 specific gravity; free from albumin; laden with urea to 0.01 per cent. to 0.2 per cent, phosphates to small percentage, chlorids to 3 per cent. to 25 per cent. and sulphates to 1 per cent. to 10 per cent., by volume. The odor is sometimes peculiarly offensive. There is no doubt, in my mind, as to the fact that the serum passes into the intestine by secretory action.

During the period of alvine drain renal activity is reduced; subsequently the flow of urine usually becomes very free, often continuing so for many days, even until the cardiovascular-sanguineous and lymphatic-tissue lymph balance of the circulation has been restored. In the most successful cases the urine is not only increased in quantity, but in urea content as well—rising in one instance to the enormous output of 994 grains during a single twenty-four-hour period. In some unsatisfactory cases—rare in my experience—the flow of urine is not augmented; the overstretched areolar tissues fail to regain their resiliency; the current of tissue lymph toward the lymphatics is not maintained—possibly it had not been attained; edema continues or increases.

This initial part of the treatment, in typically successful cases, is followed by subsidence of the objective and subjective symptoms—uremic as well as circulatory—with such relief to the patient that it may be fairly described as profound. Much of the improvement appears promptly; more is noticeable during the following two weeks; the full measure of benefit, however, is not obtained until about the end of six weeks, and a surprising proportion during the last few days of this period. The improvement usually continues for several months; it may be of short duration; occasionally the period is remarkably extended.

In whatever manner the relief may have been induced it is probable that it may be made more complete and greatly prolonged by close medical supervision and persistently careful management. For this reason I have, for many years, advised these patients to take daily systematic, well-considered and individualized, active exercises of such character as to bring into play as many as possible of the muscles of the body. Whenever necessary this is supplemented by general and vigorous massage. The object of these measures is to facilitate, forcibly, cellular activity. The results have been so satisfactory that I commend these methods for consideration.

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The Winning Hand.—There is no place in this world for the man who is afraid of work. The place at the top of the ladder is for the fellow who climbs. The gloved hand is not the hand for the scepter. God makes world-rulers and world-builders of the toilers, the plodders.—*United Presbyterian.*

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. CHRISTIAN, MUSSER, VAUGHAN AND WELLS

Dr. D. L. Edsall, Philadelphia: It is very clear that a great many erroneous conclusions have been reached in the vast amount of literature that has accumulated on this question. There is no constant relation between the retention of chlorids and edema and the severity of the nephritis. There are, then, various reasons why the theories concerning the extremely intimate relation between edema and the chlorid disturbances are not established. There are also errors in regard to the conception of the cause of alterations in chlorid excretion, for reduction may, on the one hand, clearly be due to a reduction of the capacity of the kidneys to excrete chlorids, while in some instances it is certainly due to alterations in processes going on elsewhere than in the kidneys; and at times the latter are probably definitely conservative processes, designed to relieve the kidney of its work of excretion, and the edema itself becomes a conservative process, partly to relieve the kidneys and often largely to relieve the circulation. A reduction in the amount of sodium chlorid ingested, aside from any influence on edema, helps largely to reduce the work that the kidneys do.

I saw this fact strikingly illustrated some years ago in some experimental observations I made in regard to the possible value of studying the excretion of definite doses of sodium chlorid as a means of testing the functional capacity of the kidneys. I gave sodium chlorid to various persons who appeared to have about the same degree of damage of the kidneys, some of them having actual nephritis and some of them simply arteriosclerotic changes. I several times met with observations which made me give up the studies because it was clear that there was danger attached to such a test; that is to say, I found in several instances that an amount of sodium chlorid no more than equal to what is taken in an ordinary diet, produced evident and sometimes marked increase in the incapacity of the kidneys to carry out not only the excretion of sodium chlorid, but excretion in general, of water as well as of the solids, was largely cut down. It is clear then that an amount of sodium chlorid not more than equal to what is contained in an ordinary daily diet may cause decided failure of function on the part of the kidney even in cases in which the kidney appears to be doing fairly good work. Hence, whatever we may think concerning the theories of the relation of salt to the symptoms of nephritis it is certainly a valuable procedure to limit the amount of table salt in the diet. This same point has been elicited in another way recently in some work that Dr. Lavenson has been doing in my laboratory in regard to the influence of certain potassium salts on the excretion of chlorids in the urine, basing this work on the statement of Bunge, which has not been generally accepted, however, that potassium salts cause a decided increase in the excretion of chlorids. There seems to be little doubt that Bunge is right about this, for Dr. Lavenson found a decided increase in chlorids after a variety of potassium salts. The nitrate which has been considered to have an especial action did not appear to be particularly active as compared to the others, the effect exerted being apparently in direct relation simply to the amount of potassium given. Dr. Lavenson naturally tested the suggestion that at once comes from this that potassium salts might be a good method of overcoming chlorid retention. The result proved to be merely an instance of the fact that when we attempt to do what superficially appears to be right, we may do harm. The retention of chlorids appeared to be in some cases definitely a protective thing, and urging the kidneys to excrete more chlorids simply did harm, the general excretion being reduced, although the chlorids might increase or decrease—actual toxic symptoms developing in one case in mild form. There is one more point that I would lay stress on: That is, we should approach all these conditions with the idea that they are largely dependent on intoxication and the best way to relieve intoxication is to start by relieving the amount of work demanded of the eliminative organs as far as we can. Satisfactory results can sometimes be obtained in these cases by placing the patients on actual starvation for a brief period, sometimes a day and sometimes several days. This gives an opportunity for improvement in the digestion and the metabolic and excretory functions through giving them a partial rest. It is of course necessary when carrying on starvation for this or any other purpose to be very watchful of the effects, as it is a serious procedure, but in these cases it is necessary to undertake serious measures, and the reduction of the diet to nothing but water or to say a pint of skim milk in a day, to which water is added, will sometimes accomplish very comforting results, which are not obtained when an ordinary full milk diet is used.

Dr. Delancey Rochester, Buffalo, N. Y.: There are two practical points I should like to speak about. First, it strikes me that salt-free diet is valuable in those cases in which there is much edema, because of the fact that in the fluid and in the tissues of the body there is a considerable amount of sodium chlorid which will supply its needs. Dr. Vaughan has shown that the tissues of the body need chlorids to a considerable extent; if we withhold them from the food, Nature has provided a source of supply in the serum of the edematous fluid, which may be called on when they are in demand. I should think that if the fluid ingested be restricted, fluids could be obtained from this same source. Second, in the management of uremic attacks I wish to commend Dr. Wells' procedure, but in addition, there is one thing used in these cases which I find of special value—the action of the skin as an eliminative organ. I have found it very useful to administer, ten or fifteen minutes before giving the hot water bath or hot pack, minute doses of pilocarpin, 2 or 3 mg., it aids greatly in producing profuse sweating in these patients. Elaterium has also been recommended. I have used it in smaller doses and continuously—perhaps 8 mg. twice a day. It does not produce nausea, but drains the bowels and is of great advantage in these cases.

Dr. James Tyson, Philadelphia: Dr. Christian's paper was one which has so thoroughly covered the lines with which I am practically familiar that I hesitate to say anything on the subject or on what he has brought out. I was struck, however, with the apparent differences of result in experimental nephritis as compared with the symptoms that are observed clinically. I was also impressed by what was said as to the sorts of casts which first make their appearance in producing experimental nephritis. In actual experience the cast that appears first is usually the hyaline cast, and not the granular cast. This is seen in the passive congestion due to cardiac disease which permits a leakage. As the seriousness of the condition grows the granular cast appears, becoming more and more granular, *pari passu*, with the destruction of the cells. What Dr. Christian has quoted as experimental facts are probably correct, but they do not agree with my experiences in the study of the urine in actual cases. With regard to the treatment of high tension, Dr. Musser has struck the keynote, but not enough stress was laid on the impropriety of treating high tension *per se*. To strike at the root of the evil, one must remove the cause of the high tension. In this respect, Dr. Edsall's statements on the matter of starvation are sustained by my experience. Many years ago I taught the treatment of nephritis by small quantities of milk, or as little food as possible. This was not for the purpose of relieving the uremic symptoms any more than to remove the edema and the vascular symptoms of an unfavorable kind.

Dr. John A. Lichty, Pittsburg, Pa.: When a slight cerebral hemorrhage occurs in these cases, the blood-pressure immediately drops and remains down a longer time than one would expect it to do when rest is ordered. There is no trouble at all in keeping the blood-pressure, which was 265, down at 195 or 210, while the patient is leading a rather active life. These patients are of course thoroughly frightened and are willing to follow a regimen now of rest, diet, etc. But the drop in the blood-pressure is very sudden and will remain lower for a longer time than one would expect.

I should like to refer to two patients with chronic appendicitis whom I have had operated on during the past year in which there was a history of nephritis of some years' standing; I of course had to consider the safety of an anesthetic. Ether narcosis produced absolutely no disturbance of the urinary secretion. The first patient was 24 years old and had

had scarlet fever when 3 years old, and was afterward sent to Dr. Tyson of Philadelphia and Dr. Janeway of New York, because of the existing nephritis. Albumin and casts remained in the urine year after year. It was decided that an interval operation for appendicitis should be done. Very great care was taken in giving the ether, and there followed no disturbances in the urinary secretion at all. The second patient, twelve years ago, had had diphtheria and a general anasarca afterward. Dr. Osler saw this patient and pronounced the condition a very severe case of parenchymatous nephritis. This patient also had to be operated on for appendicitis. The ether narcosis had no evil effect on the kidney secretions.

A third patient, however, with no signs of nephritis, did quite differently. This patient had normal urine, and was operated on under ether narcosis. After the operation there appeared an acidosis, casts, albumin, etc., and death due to anuria occurred within twenty-four or thirty-six hours after the operation. With such diverse experiences it seems to me that after all our knowledge of this condition, so far as it applies to the individual patient, is not of very great practical value.

DR. JOHN N. UPSHUR, Richmond, Va.: I want to protest against the administration of morphin or any opiate as a temporary palliative in the treatment of uremia;; it certainly does interfere with secretion. The thing we should do in cases of grave uremia is to direct our work as much as possible along lines of safety; therefore, if we can give rest to the kidneys and at the same time get elimination we can accomplish much more and do much better than if we get our head in the bushes like the ostrich, by giving morphin, and think we are accomplishing something.

If we can give rest to the kidneys by placing the patient in a hot pack and by hydragogues cause elimination through the bowels, we will find that we not only give relief from the grave uremic symptoms, but through the elimination through the skin and bowels at the same time we can reduce the amount of tension in the blood vessels. The error we are liable to fall into in patients who may and do have renal trouble, is that we do not make sufficient analyses of the urine and do not get the careful knowledge of what is going on by such a systematic urinary analysis. We are all apt to err in this direction. Even in those cases in which there is no suspicion of renal lesions we should keep in touch with the condition of the kidneys by a careful observation through urinary analyses; this should be made a routine matter.

DR. WALTER L. BIERRING, Iowa City: It seems to me that sufficient emphasis has not been given in this discussion to the special reference made by the last speaker in the symposium on the relation of circulatory disturbances to uremia. Whatever conception we may have as to the nature of uremia I am sure we recognize that the appearance of its symptoms is largely dependent on the maintenance of the cardiovascular balance, and the real problem of treatment at the present time is to anticipate and control, so far as possible, the cardiovascular disturbances.

DR. HEINRICH STERN, New York: Dr. Christian mentioned in parenthesis that the excretion of albumin via the kidneys can only ensue on the basis of a diseased condition of the latter. Evidently he has not consulted some of the latest literature on this subject.

It is not a diseased kidney which permits the transudation of the albumin, but a strong and healthy kidney. I should say that the healthy kidney is always permeable for the albumin molecule, but that the blood which attaches itself to the albumin and then deposits it in the tissues whence it is again taken up by the return circulation in the form of urea, does not permit the escape of the blood proteids prior to their intrasystemic disintegration. While, therefore, albuminuria is a pathologic occurrence, its causative factors are not situated in the kidneys but are distinctly anterenal.

Although Dr. Wells has not brought out anything substantially new, he has developed some new view-points and interpretations. I know that he has not especially entered into a clinical subdivision of the uremic states. I think, however, that it is impossible to apply rational treatment unless one knows the basis on which the uremia has developed. For instance, in the large white kidney, the passage of urine is seriously interfered with; in contracted kidney, on the other hand, there is nothing to prevent its excretion. The sera of uremia on the basis of chronic parenchymatous nephritis are differently constituted in some major points from those of uremia due to interstitial nephritis. In parenchymatous nephritis there is a tendency to convulsive phenomena, in interstitial nephritis to a comatose state. This important divergency is explained by the different constitution and physico electric behavior of the respective sera. I have shown that there is no chemico-toxicity which stands at the foundation of the uremic phenomenon, that there is not a single substance, known to us, excreted by the urine or the other excrements, which is apt to bring about either the convulsive or the comatose phenomena. By retention nitrogen in the blood is understood all the nitrogen remaining in the liquid after complete removal of the albuminous substances. The average amount of retention nitrogen in 100 c.c. of normal blood serum is between 25 and 30 mgs.; in chronic parenchymatous nephritis without uremia the average amount is 40 mgs. and in the presence of uremia about 62 mgs. in 100 c.c. blood serum; in chronic interstitial nephritis without uremia an average amount of 82 mgs., and when uremia prevails 130 mgs. retention nitrogen were found. These figures show that in the blood serum of chronic parenchymatous nephritis about 35 per cent. more retention nitrogen is contained than in the normal liquid; that in interstitial nephritis the retention nitrogen is present in twice the quantity as in the parenchymatous variety, and that the retention nitrogen is augmented in the uremic states consequential to the nephritic conditions. The enormous amounts of retention nitrogen in the serum of chronic interstitial nephritis undoubtedly stands in causative connection with the natural termination of the disease-uremia. In parenchymatous nephritis uremia is not only a much rarer but also a less grave complication. This I have explained by the fact of the relatively small amount of retention nitrogen. The inconsistency of pursuing the same plan of treatment throughout in the various cases of uremia which are so unlike in their manifestations and have risen from such distinctly discrepant substrata is obvious. I think it is unwise to speak of the management of uremia, when this uremia may mean that we may have at least two entirely different states to deal with. One cannot be treated like the other.

Some one said that morphin was contraindicated in uremia. This has to be taken with a grain of salt. In the uremia of chronic interstitial nephritis, which is characterized in almost every instance by a condition of tranquil coma, very rarely exhibiting convulsive phenomena, morphin is certainly contraindicated, because it also causes coma and may thus aggravate the existing comatose condition and hasten a fatal issue. On the other hand, in the uremia of chronic parenchymatous nephritis, which is characterized by convulsive seizures, morphin may have a distinct value when chloroform has proved of no avail. Its efficacy in controlling the convulsions may be due to the retardation of the metabolic processes ensuing from its administration, thereby preventing further accumulation in the blood of catabolic substances, and to its augmentation of vascular tonicity.

DR. BOARDMAN REED, Los Angeles, Cal.: I wish to confirm the observations of Dr. Tyson of Philadelphia and Dr. Smith of Baltimore regarding the value of therapeutic fasting or starvation, not only in fevers but in other conditions. We know that in gastric ulcer and, in my experience, in hyperchlorhydria, the good results which follow starvation for a few days when the patients are put on a light diet, particularly in patients with high tension. In treating patients with arteriosclerosis and hypertension splendid results follow placing them on a low diet, or even actual fasting for three, four or five days. In cases of high tension it is perfectly safe, particularly if the pulse be watched carefully to see that the tension does not get too low. Only recently we have come to appreciate what can be done by fasting for a few days, and particularly its influence on conditions in the gastrointestinal tract. It seems to be the only way so far discovered of getting rid of the bacterial cause of the trouble in certain cases.

Dr. Hugo A. Freund, Detroit: I find that too little mention has been made of the value of observing hypertension systematically. This one thing as suggested by Dr. Bierring should be carefully watched in each case we are treating. It is very essential to note the condition of the cardiovascular system in connection with the urinary findings. I do not believe, however, in the desultory examination of the blood-pressure with the sphygmomanometer, taking the blood-pressure one morning, then the next, and so on, but I do urge its systematic use. A competent nurse or assistant can be trained to take two-hourly readings. These, when charted, give us most valuable curves that aid in the immediate treatment and in the prevention of otherwise unavoidable accidents. In many cases an oncoming uremia is shown a long time before the patient is seized with convulsions or other disturbances make their appearance.

Dr. Charles F. Hoover, Cleveland: It has not been clearly stated whether we are dealing with a cardiovascular problem or an impairment in renal elimination or uremia. There seems to be a lack of clearness on the part of the speakers as to what phase of nephritis these therapeutic efforts have been directed.

Dr. Henry A. Christian, Boston: In the paper I simply discussed the acute toxic nephritides. If an animal be given a small dose of these irritating substances and then examine the urine you will throughout the course of the observation find in the urine simple hyaline casts. It does not follow that those casts have been hyaline from the beginning of formation. It simply indicates that a considerable time has elapsed between what has been formed in the kidney and what appears in the urine. If certain cases of cardiovascular disease be observed, we all know that only hyaline casts will appear during the time of observation of this condition unless there is an acute exacerbation when the granular casts appear. Apparently from experimental work the following explanation will serve for these cases. The casts are formed in small quantities, and the formation takes place slowly because the irritant used is small in amount, or the irritant present in the human body is small in amount. The casts do not make their appearance in the urine for a considerable period of time. In the time elapsing between their formation in the kidney and their appearance in the urine they have become homogeneous and consequently hyaline. This condition can be repeated with ease in animals. There is no discrepancy between the clinical and the experimental findings. Two factors must be considered, the time relation of cast formation, and the time relation of cast excretion. It is the period between these two occurrences that determines whether the casts will be hyaline or granular. At the same time it must be acknowledged that there is always a chance for error in arguing from animal experimentation directly to man. So far as we are able to judge, the method of formation of casts in animals is probably the same as in man; but of this, however, we are not certain. It was my intention in the paper to adhere to the consideration of the title, "Experimental Nephritis," and no mention was made of various other types of edema and renal lesions because this was considered beyond the scope of the paper. Albuminuria without renal lesion, as referred to by Dr. Stern, has so far as I know, never been produced in animals, and anyhow is hardly a part of a symposium on nephritis.

Dr. John H. Musser, Philadelphia: We must remember that hypertension is a curative process; therefore, any attempts to remove it entirely, especially after degenerative lesions secondary to the process have arisen following the intoxication, will be and should be in vain. What we must do is to reduce such hypertension to the normal for that individual. I have made the same observations as has Dr. Lichty in regard to the fall in the blood-pressure and the persistence of that fall after an attack of apoplexy. In subsequent attacks the fall is very great, and it is probably due to the attack. Afterward the blood-pressure does not rise to the same point. In considering the treatment, I did not refer to the dietetic management so strongly as I should, especially in regard to the limitation of the amount of food taken and the proper selection of food. One must rely on the results of a study of the function of the stomach in determining the line of diet, plus the general broad principle of the limitation of the amount given. I want to refer to the use of two drugs. First, iron which is administered not only for the hypertension but for the degenerative lesions that accompany it. This remedy is of the greatest value. It is not only, it appears to me, a drug which supplies iron to the blood, but it also has some nutritional effect on the cellular structures. Undoubtedly iron does, as observed years ago, lower the blood-pressure when its use is prolonged. In cases of myocardial disease, and indeed I might say in cases of cardiac disease with dilatation, if I had to decide in an emergency of acute dilatation what remedy to use, I would prefer iron to digitalis. This agent, however, should be kept up for a long period of time. I should like to refer to opium as a remedy of great importance for the neurosis which attends this condition, either as a factor secondary to the intoxication or secondary to the hypertension. Small doses of opium or morphin give most satisfactory results in securing that equanimity which is so necessary; it aids in keeping down the stress and strain incident to the increased blood-pressure. Finally a word in regard to the use of mineral waters or the purgatives we select. Unless we are very circumspect in this matter we will find patients taking purgatives containing too much sodium chlorid and bring about renal inhibition. I recently saw a case in which a large amount of saline purgative was used when it was not indicated; the result was a progressive increase at that time of renal insufficiency and consequently dropsy. Stopping the salt was sufficient to bring about the renal activity and a subsequent lessening of the amount of dropsy.

Dr. Edward F. Wells, Chicago: It should have been noted that I limited my paper to the discussion of certain clearly outlined conditions, i. e., uremia as it appears in chronic interstitial nephritis, with special reference to the lack of balance of the circulation and especially the extravascular circulation and the tissue lymph. This was done for the reason that in the fifteen minutes at my disposal it was impossible to go into all the different varieties of uremia, and the prevention of its causes. In my paper I laid particular stress on one point, or one sentiment, namely: the patient should be nourished to the highest attainable level with the least possible amount of food; and this applies with particular force to the proteids and carbohydrates ingested. It is astonishing to those who have not given much attention to the matter how comparatively little food is required for this purpose. Patients can be nourished on two-thirds, one-half or even one-third of what they are accustomed to take and maintain their weight, retain their vigor and increase their sense of well-being; this I have demonstrated in several instances. The trend of my remarks is this: The oncoming of uremia is manifested clearly by shadows cast before. One of the most significant of these foreshadowings is an endemic state, or usually an occult edema, in which the intracellular spaces are distended with fluid, and to a high tension. Such patients may be deprived of the excess of extravascular liquid with the loss of from five to twenty, or more, pounds in weight in a few days. Certainly this total loss in weight is due wholly to the loss of liquid and not to that of fat or the solid tissues of the body. In the cases in which the edema is occult, more or less manifest, I believe this to be an extremely important matter. The extravascular fluids contain an abnormal amount of certain salts, markedly differing from the proportions ordinarily contained in the lymph; therefore, the extravascular circulation is either overlooked as a whole, or portions are short-circuited. This is demonstrable in anasarca in which the legs are edematous; if indigocarmin be injected in the leg, it may be a very long time before it appears in the urine, and hours before it is noticeable in the serum of the opposite leg, or the serum may be drained from the opposite leg without getting a trace of indigocarmin. It has been short-circuited. It is to this condition that I wished particularly to call attention, not only because of its importance, but because I believe that it is either not sufficiently recognized, or due attention has not been given to it. The method of drawing off the liquid through the intestines is one of the many measures for the reduction of the edema which may be adopted; but on the method employed will depend its success or failure. If one gives elaterium he is sure to be uniformly dissatisfied with the results, but if he will follow the lines suggested definite results will be attained. With regard to occasional starvation, this, too, is a method which can be used, and is an essential feature of the method advised in the use of elaterium. The patient is practically starved; but he can live a long time without the ordinary foods. However, one may drive the nutritive portions of the blood out into the intracellular and lymph spaces; but stimulating the cellular secretory action in order to induce a return flow of the waste-laden and toxic lymph back into the general vascular circulation is not such a simple procedure. The serum obtained through the intestines by the use of elaterium is in the nature of a vicarious elimination, which is brought about by secretory action and not solely as the result of pressure. The fluid may be readily obtained clear by filtering, and is free of albumin; there may be a mere trace of it perhaps, but when such is the case it is accidental and due to the open spaces left by broken-down epithelium. The tissue lymph is albuminous and contains salts in a different proportion than is found in the serum drained off through the intestines.

OVARIOTOMY AND MYOMECTOMY EARLY IN PREGNANCY, WITH FULL-TERM DELIVERY*

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The relation of sterility and fibroids of the uterus has been widely discussed and two opinions defended by the opponents. One teaches the theory that the sterility is due to the growth in the uterus, while the other insists that the tumor is the cause of the sterility.

As the cause of tumor formation in the uterus is not known, the opinions expressed are but a speculation. One opinion is entitled to as much consideration as the other.

Fibroid tumors of the uterus are found in women under different modes of life; the married, the unmarried, the sterile as well as the fruitful are subject to this disease. These tumors are found in women who have suffered infection of the genital tract, and also in those who have never had an infection. They are found in the virtuous as well as in the morally lax, in the virgin as well as in the sexually promiscuous. In some cases the tumor appears early in life, in others later. The growths occur in women living in luxury as well as in their sisters of hard toil. They occur in women of all races, although the colored race is said to be more liable to these tumors.

It is not known to what extent the physiologic congestion occurring periodically in the genital organs during menstruation is responsible for these tumor formations, or if a responsibility can be put on this function at all.

In this connection there is a case on record by Sutton[1] which is of interest. In this case a tumor supposed to be a fibroid was present for ten years in the uterus of a childless woman, twice married, who had never menstruated or shown any evidence of physiologic ovulation.

Emmet,[2] who has studied the subject of disturbed menstruation in fibroids and their relation to sterility, expresses himself as follows:

> Between the ages of thirty and forty years the unmarried woman is fully twice as subject to fibrous tumors as the sterile or the fruitful. I have already pointed out that this is one of the tributes which an unmarried woman pays for her celibacy. It seems as if it were the purpose of Nature that the uterus should undergo the changes dependent on pregnancy and lactation about once in three years throughout the child-bearing period, and that if the uterus is not physiologically occupied in child-bearing a fibroid will the more rapidly develop into a fibrous tumor as the woman advances in life. This will also be the case with the married woman who has taken means to prevent conception, as well as with her who has been sterile from some cause beyond her control, but to a less degree in the latter case. Finally, the woman who may have been fruitful in early life may have a tumor develop, but is less liable thereto from having once borne a child.

On the other hand, Haultain[3] holds that "sexual excitement in marriage favors the growths of fibroids; that fibroids tend to prevent child-bearing, and, further, that pregnancy in many cases, by promoting their growth, prevent conception in the future."

A fibroid tumor may lie dormant for a long time in the uterus of a sterile woman; she may then conceive, and with the conception the tumor grows and becomes an active factor in causing an abortion of premature labor later in the pregnancy.

A case of this kind came under observation last year.

CASE 1.—*History.*—Mrs. G., aged 35, had been married fifteen years. She had one child two years after marriage but had not conceived since. She had a small fibroid in the uterus, the existence of which she had known for many years. The tumor never produced any symptoms. Six months previous to my examination she stopped menstruating but did not think that she was pregnant. The amenorrhea extended over four months; then she began to flow moderately. At first she thought it was a menstrual period; the flow continuing over six weeks convinced her that something was wrong. She consulted her physician, who called a consultation. Under a light chloroform narcosis a large tumor complicating a pregnancy was made out. She was transferred to the hospital for observation, where a few days later she delivered herself of a five months' fetus. The placenta not coming away satisfactorily, she was narcotized, the placenta removed and the uterine cavity thoroughly explored. With the hand in the uterus a fibroid was palpable, which projected into the cavity of the uterus, undoubtdly causing the premature labor. It was hoped that with the subinvolution of the uterus the tumor would return to its previously quiescent state. Instead of that the patient kept on flowing.

Operation.—Seven weeks later, on account of severe metrorrhagia and anemia, the patient was operated on and a panhysterectomy performed. On opening the specimen it was found that the uterus had involuted perfectly but that the tumor extended clear through the uterine wall and projected into the cavity of the organ, causing the persistent metrorrhagia.

Here we have a dormant tumor awakening into activity by the conception, and by its rapid growth causing a premature labor and also bringing about symptoms that called for hysterectomy.

While there is a distinct relation between sterility and fibroids of the uterus, the underlying cause of this relation is not known. There are cases of pregnancy on record in uteri that apparently were hopelessly destroyed by myomatous tumors. Under what conditions does pregnancy occur in organs so overwhelmingly damaged by fibroids?

A most interesting case of this kind was reported by Dr. I. S. Stone[4] at a meeting of the Washington Obstetrical Society. The tumor consisted of a large mass of myomata of varying sizes, which he had removed from a woman six weeks pregnant. The uterus was entirely hidden from view by the surrounding nodular masses. The patient was 30 years old and had been married less than six months. She had been subjected to a conservative myomectomy four years previously. A most difficult and complicated problem confronted the surgeons when the abdomen was opened. The transverse colon was adherent to the growth and all of the omentum was sacrificed in its removal. The adnexa were firmly adherent and hopelessly diseased. The entire uterus was removed save a rim of cervical tissue. The case is one which shows how the most decided changes in the uterus itself, as well as the endometrium, may not prove a hindrance to impregnation.

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* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Sutton: In Allbutt and Playfair's System of Gynecology, ii, 562.

[2] Emmet: The Principles and Practice of Gynecology, Edition 3, p. 549.

[3] Haultain: In Allbutt and Playfair's System of Gynecology, p. 564.

[4] Stone, I. S.: Am. Jour. Obst., September, 1908, p. 499.

In regard to adenomyomatous tumors of the uterus, Cullen says[5]:

> The disease is most prevalent between the thirtieth and sixtieth years; it does not in any way tend to sterility. . . . Our experience goes to show that neither an infantile condition of the uterus nor sterility is in any sense a prominent feature with these tumors.

Fibroid tumors may cause sterility by mechanical means. The tumors may distort the uterine canal to such a degree as to obstruct the onward movement of the spermatozoa, or by irritation set up an endometritis, the discharges of which become inimical to the life of the fecundating cell. A tumor may so dislodge the cervix uteri as to make it inaccessible for the semen, hence the sterility. A fibroid, particularly if it is a submucous growth, may keep up a state of congestion of the mucous membrane, this extreme vascularity being unfavorable for the implantation of an impregnated ovum, and hence the sterility.

The cause of benign growths in the uterus not being known, who can say but that the same conditions that are responsible for the fibroids may also cause the sterility? A woman, for example, is fruitful for many years, stops bearing children and develops a tumor. Who can say but that the same factor is responsible for both the tumor and the sterility? Pregnancy is not a simple affair, but the result of a delicate mechanism, and so delicate a mechanism as the fecundation of an ovum must depend on a variety of conditions and not merely on the meeting of the ovum with the sperm cell; hence anything which disturbs this delicate mechanism may be the cause of the sterility. It can not be denied that pregnancy favors the growth of fibroids and that future pregnancies may be interfered with by the greater enlargement of the tumor. We also see cases of conception with fibroids after long periods of sterility.

In considering the subject of sterility, whether the patient is suffering with a tumor or not, there is one thing to be borne in mind, and that is the competency of the male partner. This factor can necessarily never be left out of consideration, and if due attention were given to this subject in every case of sterility with fibroids of the uterus we would find that a large number of these women are sterile because the male partner is incompetent. The competency or incompetency of the male partner has still another bearing on this subject, and that is this: The male partner may be suffering with a sterility due to an obstructive epididymitis from a gonorrheal infection contracted years ago. During the course of marital life the wife suffers a mild gonorrheal infection, which may in turn be the causative factor of the sterility in her, the development of the fibroids in her uterus being incidental and not necessarily the cause of the sterility. In one case of sterility and fibroids one cause may be operative while in other cases the causes may be several. In one case the cause may be a purely mechanical one, while in the other the cause may be a physiologic one. Until we shall be able to tell what the cause of fibroid formation is we shall not be able to formulate an opinion as to the relation of fibroids and sterility.

Sterility and fibroids are certainly closely associated, and this close association must necessarily be assumed to exist when it is considered that fibromyomatous tumors are associated with the periods of sexual activity. As Haultain[6] says: "Their growth is practically confined to the years between puberty and menopause, and it is doubtful if they ever originate before or after this period; indeed, if uncomplicated by secondary changes, they cease to grow after the climacteric."

There are no reliable statistics available of large numbers of cases to show what proportion of fruitful women are subject to myomatous growths of the uterus, to indicate how statistics of that character would compare with fibroids in single and sterile women. The subject of fibroids and their relation to sterility under consideration consists really of two parts; one is the subject of sterility itself and the other is fibroids of the uterus. Sterility by itself is a complex subject, little understood, and the same is true of the cause of fibroids.

From a clinical point of view there is a practical side to this question of sterility and fibroids and the manner of behavior of the myomatous tumors toward the pregnant uterus. Clinical experience has shown that the pregnant uterus, under certain conditions, is tolerant toward the fibroid growth. In these clinically favorable cases neither the pregnant organ itself nor the progress of the pregnancy is in any way harmfully affected by the growths in the uterus. With this evidence at hand we certainly are permitted to infer that fibroids of the uterus, under certain not clearly understood conditions, are not harmful to the pregnancy, to the fetus or to the patient herself. This being the case, we can deduce the practical lesson not to disturb myomatous growths during pregnancy unless there is clinical evidence at hand to show that the pregnant organ has become intolerant to the tumors in its walls. The size of the growth, or its situation, does not necessarily determine the tolerance or intolerance of the pregnant organ toward the tumors, but the size and situation are of great moment, so far as the future labor is concerned. The size of the tumor, and its situation as well, become important factors at the time of the labor on account of the possibilities of the tumor causing difficulties during the delivery in the form of mechanical obstruction.

Right here a practical question may be asked. What type of tumors should be attacked surgically during pregnancy? The teaching is that a tumor should be removed if pedunculated, excessively movable, greatly enlarged, or so situated as to cause mechanical obstruction during the coming labor. Surgical procedures are justifiable under these conditions even if the uterus is tolerant to the tumor in its walls. Pedunculated fibroids are removed because they are subject to twisting during pregnancy; they are also subject to degeneration during the process of subinvolution of the uterus.

To judge properly what fibroids will cause mechanical obstruction during labor is a difficult task. Cases are on record in which competent observers considered the situation of the tumors dangerous and undoubtedly liable to cause obstruction during labor, but in which under the test of labor the patients delivered themselves spontaneously or with the aid of low forceps operation. We must be constantly on guard in giving positive opinions on this question of obstructed labor by low-implanted fibroid tumors of the uterus. These low-implanted tumors become lifted out of the true pelvis during the progressive enlargement of the uterus, during the pregnancy, and when labor sets in very little if any mechanical obstruction is encountered.

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[5] Cullen, T S.: Adenomyoma of the Uterus, 1908, p. 261.

[6] Haultain: In Allbutt and Playfair's System of Gynecology, p. 562.

What is the present teaching as regards the so-called interstitial fibroids and operative interventions during pregnancy? Clinical histories have established the fact that interstitial fibroids are of the type of tumors that cause miscarriages most frequently, and yet tumors of this type, when enucleated during operation, will cause the greatest number of abortions, because the pregnant organ suffers the greatest amount of traumatism during the removal of these deep-seated tumors. In view of these facts it becomes an important question what is best for a physician to do when called on to manage these cases. Each case of this type must be treated on its own merits. If the pregnant uterus seems intolerant to the presence of the tumor, which should be shown by periodic more or less severe uterine contractions, then an operation should be seriously considered, because with symptoms so marked a miscarriage is impending and a myomectomy may jeopardize the pregnancy to a less extent than the persistent uterine contraction.

The submucous fibroids are the type of tumors that cause sterility most frequently. This sterility is due not so much to the tumors themselves as to the congestion to the mucous membrane of the uterus, which their presence engenders and maintains. Once conception occurs in uteri with submucous fibroids the surgical attitude toward these tumors in pregnancy is the same as in the interstitial type of fibroids.

In the multiple fibroids of the uterus pregnancy has proved to be a dangerous complication. Clinical evidences are at hand showing that under those conditions abortions occur frequently, and great difficulty is at times experienced in properly emptying the cavity of the uterus of the product of the conception. Septic infections are frequently encountered in these cases, and gangrene of the tumors is not an infrequent complication, calling for total hysterectomy to save the life of the patient.

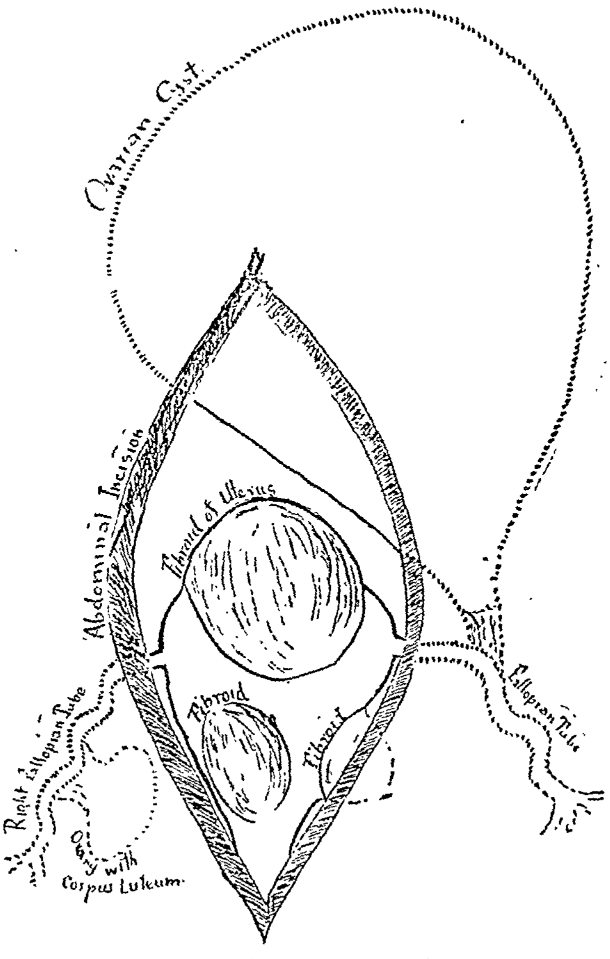
In the case the history of which I shall presently relate several interesting points arose previous to the operation.

1. The patient was suffering with an ovarian cyst which twisted on its pedicle, causing acute symptoms.
2. There were several fibroid nodules to be felt on the uterus.
3. The patient was a primipara, married nine years.
4. She was extremely anxious for a child.
5. For a week or ten days previous to the onset of the acute symptoms the patient had very definite and frequent contraction pains of the uterus, permitting the interpretation of the symptoms that a miscarriage was impending.

When the necessity arose for an operation the question was asked, what would be the best thing to do in this particular case, in view of the definite symptoms present numerated above. Should the offending neoplasm, the twisted ovarian cyst, alone be removed and the fibroids be left undisturbed for fear of inviting a miscarriage, or should the entire surgical field be simultaneously attacked? I felt that in this particular case I had no right to ignore the symptoms that pointed to a tendency on the part of the uterus to empty itself, and so a myomectomy was also performed. The question may be asked, given a case of early pregnancy, with several small fibroids in the uterus that the pregnant organ kindly tolerates, if an ovarian cystoma be present at the same time, whether it would not be good surgery to remove the offending cyst alone and leave the fibroids undisturbed. It seems to me that such a procedure would be perfectly justifiable, since we know that gravid uteri are frequently most tolerant to myomatous growths.

The history of the case is as follows:

CASE 2.—*History.*—Mrs. H., aged 37, was seen on Aug. 9, 1907. She was brought to the hospital in a carriage, having fainted on the street. She was complaining of pain in the abdomen, which came on very suddenly, causing vomiting and fainting, resulting in a collapse on the street. The pain was sharp, cramp-like in character, excruciating at first; it gradually subsided and when I saw her about two hours after the attack her abdomen was simply tender but no pain was present. For a week or ten days before this attack the patient had not been entirely well, having suffered with cramp-like pain in the abdomen, moderate fever, indigestion, and an uncomfortable feeling in the bladder. The cramp-like pain of a bearing-down character, lasting for a short period, would let up only to reappear again at short intervals. She had been married nine years but never had been pregnant; the cause of the sterility was not known. Her menstruation was always normal, of the four-weekly type, moderate in amount, lasting from three to four days. Her last menstruation, on July 28, had been



Fibroids of gravid uterus, and ovarian cyst.

very scanty, almost none. She did not know if she were pregnant or not, having had some slight morning nausea and the scant menstruation at the last period. Family and previous history negative.

Examination.—The general condition of the patient was good. Heart and lungs normal; abdomen was not enlarged but was tender to the touch. Bimanual examination revealed a slightly enlarged uterus with several fibroidal nodules on its surface. A large movable tumor was also present in the pelvis. The diagnosis was ovarian cyst, with twisting of pedicle, fibroid of the uterus and pregnancy. On account of the extreme movability of the pelvic tumor it was thought that the attack of pain was due to the twisting of the tumor on its pedicle.

The patient was advised to submit to an operation for the removal of the tumor and for a myomectomy. The patient and the family were very anxious for offspring.

Operation.—After careful preparation the patient was operated on Aug. 13, 1907. The abdomen was opened in the median line, the pedicle of the cyst was tied off and removed. There were three fibroids in the uterus varying from the size of a walnut to that of a lemon, the larger one of the tumors extending deep into the uterine wall. The tumors were removed by shelling them out of their beds and the uterus was closed with interrupted catgut sutures. In some places the bleeding from the uterine wall was quite free, necessitating very careful suture application. The ovarian tumor was on the left side. The right ovary was enlarged considerably and a corpus luteum of pregnancy was plainly visible. The abdomen was closed in layers and the patient put to bed in a very good condition.

Postoperative History.—The patient regained consciousness with very little, if any, nausea. She vomited a few times. She returned from the operating-room at 10:30 a. m. and at 4:30 p. m. a bright, bloody flow from the vagina was noticed. Morphin was administered hypodermically to relieve pain and to quiet uterine contractions. The patient was allowed to take water freely. Twenty-four hours later the bloody flow had diminished considerably but it was still bright red in color. Fifty-two hours later all bloody discharge had stopped. The bowels moved thirty-six hours after the operation. Some vaginal discharge reappeared again but this was from some blood that remained in the vagina, as it disappeared on administration of a douche. The abdominal wound healed by first intention; an entirely afebrile recovery took place. The patient sat up in two weeks and left the hospital in the fourth week. Two months after the operation the patient removed to Canada, where she placed herself under the care of a physician, who wrote to me that the patient was making a very satisfactory progress with her pregnancy and no abnormal or untoward symptoms had appeared as a result of the operation. On April 4, 1908, she was delivered of a nine-pound baby. Her labor pains started at 5 p. m. and the baby was born with forceps at 11 p. m. In other words, it was practically a normal delivery.

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ABSTRACT OF DISCUSSION

Dr. Howard A. Kelly, Baltimore: We are very much at variance in different parts of the country or even in the cities in regard to methods. I am glad that Dr. Grad spoke of the growing tendency to non-interference. I am constantly sending these patients back home without doing that which was expected when they came to me. When the tumor is in the upper part of the pelvis I habitually leave it alone, unless it is producing marked symptoms, and I do not recall any case now within some years that has been producing symptoms requiring interference. I am glad also that he referred to the fact that there were tumors which though low down might get high enough up not to obstruct delivery. When a tumor is low down it is a good practice to put the patient under a little gentle anesthetic and see if it can be pushed up. The chances are then favorable for delivery at term. Even when it is down in the cervical portion the patient may go to term, although when the tumor is large I do not think it is wise to wait for delivery *per vias naturales*. I have had a case of this kind within a year; a large, stout woman was delivered with great difficulty of a large child which lived. Shortly after she was sent to me with an enormous tumor blocking the cervix. Had she come to me at the end of pregnancy and I had found that tumor there I would have said that delivery was impossible. Yet the tumor was slipped up and with great difficulty and with considerable risk to life the child was born. In a case like that of Dr. Grad I would have opened the abdomen and taken out the tumor. I have a number of myomectomies in pregnancy to my credit, successful ones, but I prefer not to interfere, but to let them alone and to wait.

Dr. Henry D. Fry, Washington, D. C.: Dr. Grad has spoken of these tumors which are frequently low down in the pelvis during pregnancy and as a result of pregnancy, the growth of the uterus and contractions of the muscular fibers are drawn up out of the pelvic cavity so that delivery through the natural passages would be possible. When there is a pedicle the tumor can be pushed up, but even in the interstitial form of fibroid, low down blocking the pelvis, I have seen them frequently rise up in the later months of gestation and get above the brim and the woman give birth to her child naturally. On two occasions I have had to do a Porro operation when the fibroid was projecting down in the vagina and when on examination it seemed as if the fetal head were in the pelvis. There was a large round solid mass projecting down and when I operated I thought that I would have to do a panhysterectomy but I found the cervix was pushed away up above the symphysis pubes that the tumor had grown down from behind by a pedicle and was blocking the passage. One danger of leaving these fibroids alone, even when high up in the uterine wall, is the occurrence of suppuration after childbirth. I have had three cases of this kind. One patient was sent to me by Reynolds of Boston, five months pregnant. I intended to let her go until near term and do a Porro operation. However labor commenced unexpectedly with strong pains. When I reached the house the cervix was dilated to the size of a silver half dollar. She was brought to my hospital as quickly as possible. The pains continued until there was almost complete dilatation of the cervix. The labor had progressed so far that I had abandoned the plan of the Porro operation and permitted her to have her child by the natural passages. She did well for five or six days. She then went into collapse, had a high fever and was not in condition at any time afterward when I could do an operation. I knew that necrosis had occurred but she was in such a desperate condition I did not dare to operate. Autopsy showed a fibroid much suppurated. There had been rupture into the peritoneal cavity with suppurative peritonitis. In another case I did a hysterectomy, the woman recovered, and in cutting on the fibroid I found a large abscess. In another patient sent in very recently the tumor was not large. At about the eighth month of pregnancy she had a discharge with a disagreeable odor, and labor pains set in followed by premature delivery of an infant. After delivery I saw her at about the fifth day. She still had this discharge and was in bad condition. Her pulse was 32, very weak and she had septic fever. At the fundus of the uterus could be felt the suppurating necrotic fibroid projecting down from the fundus in the cavity of the uterus. She was in too desperate a condition for operation and we let her alone, watching and stimulating her and she recovered. So I think that when we decide to let these women with fibroids have their babies we must watch them very carefully during the puerperium and on the first sign of fever which we suspect is due to suppuration in the tumor we must operate at once.

Dr. A. E. Benjamin, Minneapolis: It has been my experience to have a number of these cases degenerate during the time they were in interstitial stage. In one patient sent to me after delivery I found the fibroid so wedged down and adherent that it was almost impossible to get that growth out of the pelvis. I never worked so hard in any case to get the tumor out. Another patient was a physician's wife who had had three miscarriages. She came to me at the sixth month of pregnancy and was beginning to have pain and some fever. She was in bed. I told the husband that she should be operated on. I enucleated a fibroid the size of a lemon about half way down the fundus of the uterus. She had a living child born in due time. Examination showed the tumor to be diseased in the center. This has been the case with a number examined. I feel that a certain percentage of these patients should be operated on. By careful manipulation operating on the growth itself, it is not necessary to produce abortion.

Dr. J. H. Carstens, Detroit: There are many sides to this subject. Last fall I reported cases that I had collected from all over the world—about 550—and if you look those cases over you will find the mortality is very low and that the operative mortality during pregnancy is not greater than in women not pregnant. All these patients were operated on by abdominal section without any trouble. These women could not be delivered otherwise. I have seen women who died undelivered. I had one patient, in whom I had to remove the uterus containing any number of fibroid tumors, who was delivered normally. The fibroids and the uterus were contracted so firmly, however, that it was impossible to deliver the placenta which became decomposed and the woman was septic in the highest degree and I had to operate on her four days after delivery. All these cases occur and it seems to me we can not lay down any definite rule. If a woman is pregnant and has a fibroid or any kind of tumor I think she is in a serious condition and her mental condition is not of the quietest. So we ought to consider seriously whether such patients should be operated on or not. I think a good many require operation during pregnancy and will stand it just as well as at any other time without producing abortion. In these 550 cases it was perfectly astonishing how many women went to full term after myomectomy. These records from all over the world have convinced me that myomectomy during pregnancy is not a serious operation and that furthermore nearly all the women will go to term and will save their children just as well.

Dr. H. Grad, New York City: In this case myomectomy was done because the patient presented definite symptoms of uterine intolerance toward the fibroids in its walls. She had uterine contractions which were very painful and on that account myomectomy was done after the ovarian cyst was removed. Had she had no symptoms I think I would have been tempted to leave the fibroids, and she probably would have gone on to full term as she did.

THE TRANSMISSION OF BOVINE TUBERCULOSIS TO CHILDREN*

HENRY LARNED KEITH SHAW, M.D.
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Theobald Smith in 1896 described certain differences in the virulency, morphology and cultural growth between the tubercle bacilli found in human tuberculosis and in bovine tuberculosis. Koch at once commenced a series of experiments, with the result that he not only confirmed the observations of Smith but went further and announced at the British Congress for Tuberculosis in 1901 the following conclusions:

1. The tubercle bacilli of bovine tuberculosis are different from those of human tuberculosis.
2. Human beings may be infected by bovine tubercle bacilli, but serious diseases from this cause occur very rarely.
3. Preventive measures against tuberculosis should therefore be directed primarily against the propagation of human tubercle bacilli.

Koch has been persistently misquoted and the impression is deeply implanted in the lay and medical mind that he denied absolutely the possibility of human infection from the bovine type of the tubercle bacillus. In order to offset the effect on the general public of such a statement by so eminent an authority several governments appointed commissions to make a thorough investigation. The Royal Commission of England is perhaps one of the most important. The pathologists forming this commission—Woodhead, Martin, Boyce and McFadyean—before their appointment had publicly taken views strongly in favor of the possibility of the frequent transmission of bovine tuberculosis to human beings. It is no secret that they intended and expected to have no difficulty in proving in a short time that Koch was wholly wrong in his position.

They have now been at work over seven years and their conclusions are not much at variance with those advanced by Koch. They find that "there can be no doubt but that a certain number of cases of tuberculosis occurring in the human subject, especially in children, are the direct result of the infection into the human body of the bacilli of the bovine type." They investigated sixty-four cases of human tuberculosis and found the bovine bacilli in only fourteen of these carefully selected cases. Not one of these fourteen were in pulmonary tuberculosis but were from glandular cases.

Ravenel read a paper before the British Congress in 1901 which was diametrically opposed to Koch's views in emphasizing the great frequency of tuberculosis contracted from the ingestion of milk from tuberculous cattle. The same views were reiterated in 1905 and he asserted that the majority of cases of tuberculosis of children were of alimentary origin and due to the bovine bacillus. Last fall, in his public address before the International Congress at Washington, he admitted that only a small but a definite percentage of cases of intestinal tuberculosis in children were of bovine origin.

The situation has recently been summed up by Adami, who says: "The more we have studied the more we have been reducing the number of cases that are of bovine origin and increasing the number of human origin."

It is safe to assert that the scientific world is agreed on the existence of these two types of tubercle bacilli. The technic for their differentiation has been simplified so that the determination can be carried out in any laboratory.

A few investigators, while admitting the existence of these types, believe the differences are due to the host and that the two have a common origin and can revert to the original type after cultural methods and passage through animals. In refutation of this view Theobald Smith says:

> That the bovine type should be converted into the human type has no analogy in the domain of bacteriology and as long as it is not clearly proved to occur, it cannot be accepted on mere speculation. Again, if the bovine and human cultures are indiscriminately transmitted to either species, why should two types have arisen?

This is a question of purely theoretical value in the combat against tuberculosis; for Koch has well said that it is absolutely without significance what changes tubercle bacilli will undergo after being passed through a series of animals or during cultivation under some artificial conditions. Fresh and unchanged tubercle bacilli are taken in the milk and only the morphology of fresh and unchanged bacilli should be considered.

Veranus Moore of Cornell University stated within the past year that between 20 and 36 per cent. of all cattle in the state of New York are affected with tuberculosis.

In Belgium 49 per cent. of the cattle reacted to the tuberculin test and 49.5 per cent. in Denmark. Reports from the slaughter-houses of Prussia showed that 14.6 per cent. of the cattle had macroscopic lesions of tuberculosis and in Great Britain tuberculosis was found in 26 per cent. of the slaughtered cattle. Hess found tubercle bacilli in 16 per cent. of the specimens of milk he examined in New York City. There undoubtedly may be an abundant discharge of tubercle bacilli in the milk when the udder is diseased. It has also been shown that tubercle bacilli are found in the milk of cows in which there are no signs of udder tuberculosis. These, however, are present only in very small numbers. They are found only at intervals because the bacilli after the rupture of some focus do not circulate in the blood for any length of time, but are at once picked up and fixed in the tissues.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

The Canadian government made a series of observations on fifteen cows which had reacted to the tuberculin test and been condemned. Tubercle bacilli were found in the milk of 5, and 88 animals (rabbits and guinea-pigs) were inoculated with this milk and only in 3 instances was any trace of tuberculosis found. Ten calves from healthy non-reacting cows were suckled for seven months on the milk of these tuberculous cows and in no instance did tuberculosis develop. The tuberculous cows were slaughtered and all showed tuberculosis, either of the lungs, intestines or glands, but a careful examination failed to detect any involvement of the udder. If calves, who are so susceptible to the bovine bacilli, were not affected in these tests there is but very slight probability that the human infant would be infected with this milk.

Wysckowych found that it was necessary to have at least fifteen tubercle bacilli injected into the tissues of the guinea-pig to produce infection. This is very different from introducing bacilli into the intestines, for it must be remembered that the contents of the intestines are as much outside the body as are the contents of the nostrils or external ear canal. A child might ingest thousands, or even millions, of bacilli and yet too few enter at any one point through injury or lesion of the intestinal wall to be able to set up tuberculosis. It should also be borne in mind that the bacilli do not multiply in the milk.

Infection to tuberculosis during life takes place through the air (inhalation infection) and from the food (ingestion or alimentary infection). The inhalation infection may take place through the nasopharynx, respiratory or alimentary tracts. Holt and Albrecht found involvement of the lymph nodes and lungs in 99 per cent. of their autopsies on cases of tuberculosis in children. In the home of a tuberculous adult the dangers to the child are enormous. Miller, in a study of 150 children whose parents were under treatment for tuberculosis, found physical signs of tuberculosis in 51 per cent.

Infection through the intestinal tract may come from human bacilli coughed up and swallowed; toys, fingers, food, etc., contaminated with human bacilli; or food, especially milk, containing bovine bacilli.

Bovaird, who has given special attention to the frequency of primary intestinal tuberculosis, concludes that it occurs among children in this country in about 2 per cent. of all cases of tuberculosis, while in Great Britain it is found in 18 per cent. Albrecht of Vienna found only 7 cases of primary intestinal tuberculosis in 3,213 autopsies, of which 1,060 showed signs of tuberculosis. Comby, in his series of 1,447 autopsies on children showing tuberculosis, did not find a single case of primary intestinal tuberculosis. He also makes the assertion that in his private practice among dispensary and hospital patients during twenty-five years of practice he has never seen a case of tuberculosis in a child contracted through the milk. He points out that tuberculous cattle have been largely exterminated in the dairies supplying Paris with milk and that milk in its raw state is very rarely used for infant-feeding, yet these stringent prophylactic measures against bovine tuberculosis have not had the slightest effect on the mortality of tuberculosis in children. Holt says: "Infection through the intestinal canal by means of tuberculous milk I believe to be a very infrequent means of acquiring tuberculosis in infancy."

Kitasato and Shiga have recently written interesting articles on tuberculosis in Japan; they show that human tuberculosis is as frequent in Japan as in the civilized countries of Europe and America. They also state that intestinal tuberculosis is relatively common in children although cow's milk is never used and plays no rôle at all in the feeding of children. Avison, a medical missionary in Korea, found tuberculosis very common and yet the natives never touch cow's milk or give it to their children. Responsible observers in other portions of the globe have reported similar conditions.

Harlow Brooks' account of the eradication of tuberculosis among the monkeys in the New York Zoo is significant. For years the mortality from tuberculosis was a great source of expense, as about 50 per cent. died from this disease. In making the autopsies Brooks was struck by the similarity of the tuberculous lesions in monkeys and children. A thorough disinfection of the cages was made and the healthy and diseased monkeys separated. Every new monkey was given a careful physical examination and kept in quarantine for several weeks. Tuberculosis was eliminated in the course of two years and the mortality reduced to nil. The food and milk was not changed, so the contagion must have come through the sputum or direct contact, not from the milk.

Infectious diseases are not infrequently found confined to the route of one milkman. There is no instance on record in which it has been pointed out that many of the children along one route have shown intestinal or general tuberculosis, although it is quite probable that the majority if not all the cows supplying the milk may have advanced udder tuberculosis.

Passage of the bacilli through the intestinal walls and mesenteric lymph glands into the thoracic duct and thence deposited in the lungs is the explanation of some excellent pathologists of the infrequency of intestinal tuberculosis.

Cornet made over 3,000 animal experiments and formulated the law that wherever tubercle bacilli are introduced into the body they produce either a localized tuberculosis or involve the regional lymph glands surrounding the area of infection. It is hard to understand on the basis of these experiments how the bovine bacilli could pass through the mesenteric glands without producing any changes in the tissues and then set up tuberculosis in remote organs. Albrecht, in his large series of autopsies, finds that the Cornet law applies invariably to the source of infection in children and he denies the possibility of the infection entering the circulation through the intestinal tract without leaving any trace in the mesenteric lymph glands. Holt acknowledges the possibility of the bacilli entering the digestive tract without producing intestinal lesions and setting up a lung or bronchial gland infection, but he asserts that this is not the usual course or the natural interpretation of the conditions found at postmortem examination. Theobald Smith calls attention to the fact that the tubercle bacilli are living organisms which arouse a more or less prompt reaction on the part of the invading tissues, and that they can not travel about the body at will without being recognized and held.

Bovine tubercle bacilli have never been detected in the sputum of tuberculous patients. At a private conference at the International Congress at Washington Koch asked about fifty of the leading pathologists and bacteriologists of the world if they could quote any case in which bovine bacilli had been surely isolated from human cases of pulmonary tuberculosis. One such case was cited, but the possibility of contamination had not been fully guarded against, so that it can be stated that up to the present time no authentic case of pulmonary tuberculosis in man due to the bovine type of tubercle bacilli has been reported. The natural conclusion from this is of great value, as statistics show that fully eleven-twelfths of deaths from tuberculosis are from the pulmonary variety and only one-twelfth from all other forms of the disease. A number of pathologists have found bovine bacilli in tuberculous glands. Theobald Smith isolated bovine bacilli in twelve out of twenty-eight tuberculous cervical lymph glands removed by operation and in one case of tuberculous meningitis. Hess examined mesenteric glands from three cases of primary intestinal tuberculosis in children, but found the human type in all three cases. He has found the bovine type of tubercle bacilli in excised tonsils. Hamilton White examined a series of tonsils removed from children and inoculated them in guinea-pigs. Some of the pigs died from septicemia, but of the 50 pigs inoculated not one showed tuberculosis of either type. The English and German commissions have also found bovine bacilli in tuberculous lymph glands. Theobald Smith, from his personal investigation and study of the literature, believes that "between 1 and 2 per cent. of all cases of tuberculosis will show bovine bacilli and that in individuals over twelve years of age they will be found only very rarely."

I have reported an instance in which a strong chain of circumstantial evidence convicted a cow of transmitting fatal tuberculosis to a fourteen-months-old infant. Organs from the infant were sent to the Pathological Laboratory at Harvard, where the bacilli were found to be of the human type. The cow was slaughtered and no trace of tuberculosis could be found, although she was said to have reacted positively to the tuberculin test. Kerley has reported several instances in which all appearances were against the cow but on bacteriologic investigation the lesions were found to be due to the human type of tubercle bacillus.

A circular letter of inquiry regarding the possibility of bovine transmission was sent to the members of the American Pediatric Society and leading pathologists. Thirty-seven believed it possible, although ten of these qualified their replies by stating that transmission occurred "in relatively rare cases," "exceptionally," "to a very limited extent," etc. Five replied in the negative, while twenty-five would express no opinion. Only three of the thirty-seven who believed in the transmission of bovine tuberculosis could report positive cases in which the infection came clearly from the milk and the bacilli proved to be of bovine origin.

The question is far from settled. Professor Adami of Montreal recently stated that "at first Koch went to one side too much and his opponents went to the other side too much, but at present the truth seems to have come nearer Koch's view than the other view."

The secular press is well supplied with sensational articles magnifying the great damage of bovine tuberculosis. This campaign of newspaper advertising will result in a wide-spread belief among the laity (and unfortunately some members of our own profession) that bovine infection is the principal cause of tuberculosis in man. As a natural sequence the public would feel it could disregard the ordinary rules of sanitation and hygiene provided the possibility of infection through milk could be eliminated by pasteurization of milk and slaughter of tuberculous cattle.

Dr. Bensel of the New York City Board of Health has said that he "deprecated the spread of alarm in the mind of the public as regards the danger of tuberculosis from milk."

Koch declared at Washington that in order to decide this important question he was going to undertake experiments on a broad scale during the next two years. This great problem is so vital that it should be dealt with in a temperate and scientific manner.

In a previous communication on this subject I have stated that tuberculous cattle are a menace to public health and give the disease through their milk in rare instances. Efforts to stamp out the disease in cattle should be made, but the attention of the public should not be diverted from the great and very real danger of human contagion. Whether this takes place through the respiratory or digestive tract is immaterial.

In view of the practical bearing of this question from a sanitary, hygienic, and dietetic point of view and the evident confusion and lack of positive knowledge, this Section should take up a systematic study of bovine tuberculosis and its transmission through milk. A committee could be formed to make a report at each meeting of the work that is being done in different countries and to urge and see that a differential bacteriologic examination be made in all suspected cases, not alone of intestinal involvement, but of the bronchial glands, lungs, and tonsils. State laboratories and pathologic laboratories of medical colleges would gladly aid in such an investigation.

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ABSTRACT OF DISCUSSION

Dr. William H. Park, New York: It is now accepted by nearly every one that Koch went too far, in virtually excluding bovine infection as a source of tuberculosis in man. The British reports may lead to conclusions too far the other way. If this is so, it is only because their material was selected from one locality. The men who did the work are of such ability and standing that a charge of bias hardly deserves consideration. Undoubtedly there are some who believe that nearly all tuberculosis comes through milk, but most of us are convinced that human tuberculosis, in the great majority of cases, is due to human infection. If we are to determine through bacteriologic findings the source of infection, it must first be established that the human and bovine types of health have persistent and clear-cut differences. We have sufficient facts to enable us to state definitely that cultures obtained from infants under a year, show their original characteristics so that when we find a distinct bovine or human type we can say definitely that this infection is from a human or a bovine source.

With a number of bacteriologists in the New York Department of Health, I have been testing the characteristics of the tubercle bacilli in a large number of cases. We are trying to get a fair quantitative opinion by taking all the cases of tuberculosis in these children's hospitals. We have examined additionally cultures from 200 adults and they have all been of the human type. So far we have finished our tests of the cultures from 70 children. These comprised 35 cases of generalized tuberculosis and an equal number in which the disease was localized largely in the lymph glands, bones or joints. Of the 35 suffering from generalized tuberculosis, 6 were due to the bovine type of the bacillus; 4 of these 6 bovine cultures came from 8 children obtained from one hospital. None of these was fed on breast milk. Of the other 29, only 2 were of the bovine type. Of the 35 cases of general infection in infants, there were 10 in which meningeal symptoms were pronounced and all were due to the human type.

One history is interesting: A little child who had been started on certified milk, after the third month was given commercial milk. A little later this child developed abdominal tuberculosis, and was operated on unsuccessfully. The bacilli were found to be of the bovine type. Two samples of the milk when injected produced tuberculosis. Several of the cows on the farm showed advanced tuberculosis, but no other tuberculosis was detected.

Of the surgical cases, there were 29 of involved lymph nodes. Of these 20 were due to the human type and 9 to the bovine type. Of the 5 cases in which a joint was involved all were human. In one patient with abdominal tuberculosis, operated on with recovery, the bacillus was bovine. Altogether 23 per cent. of all the cases among young children were due to the bovine type and 17 per cent. of the fatal cases. I judge that about 1.5 per cent. of all cases of fatal tuberculosis in New York City is due to bovine infection. That would mean at least 200 deaths. Of course 200 or 300 deaths are not many when contrasted with the total number, and yet if they occurred from any other disease it would be considered a very important matter. I believe we can take measures to prevent this type of infection without interfering with the far more important work of controlling the spread of infection from man. In the course of a few years we will have definite results from the investigations now being carried out in many centers of population and the relative importance of bovine and human bacilli in human infection will thus soon be finally settled for the whole civilized world.

Dr. Alfred F. Hess, New York: I don't believe that Professor Koch is misjudged in his statements. He said that bovine tuberculosis was very rare and that it did not require more consideration than the congenital type. Dr. Shaw has shown that is not correct. If these types of human and bovine tuberculosis interchange, then we have made but little progress; but I do not believe that it has been definitely shown that these types do interchange. It is difficult to get at this question because we do not know the time of the bovine infection; we are almost never able to say when the infection took place. Recently I had occasion to examine two cases of butchers' tuberculosis in slaughter-house employés. One had been infected four years ago and in the other the infection had occurred six years ago. In both cases I injected a guinea-pig and in both cases the bacillus was typically bovine and had not assumed the human type. Again, if the bacillus does not change in the human tissue, we ought occasionally to find the bovine bacillus in early pulmonary cases before this hypothetical change has taken place; whereas it has been shown that a bovine case of pulmonary tuberculosis has not been recorded. As to the small percentage being important, 1 per cent. does not seem large, but when you recall that the yearly mortality in the United States from tuberculosis is about 200,000, then certainly 1 per cent. mounts up to thousands of cases. If these cases were classed as foot-and-mouth disease, it would certainly be regarded as important enough to require even Federal consideration.

Dr. S. McC. Hamill, Philadelphia: If it has been demonstrated, as it has by Dr. Park's statistics, that as many as 300 deaths occurred from bovine tuberculosis in children under 5 years of age in one year in New York City, then the number of deaths in children from this cause in the entire United States must represent a very high figure. I think the men investigating the incidence of bovine tuberculosis have done it in a fair-minded way. The attitude of those who have opposed Professor Koch has been not to demonstrate bovine infection, the sole or chief type of infection, but to prove that bovine tuberculosis is not a negligible quantity and that it represents an important percentage of the cases which occur in early life and that it is the duty of those directing the health of communities to protect the public from the possibility of this form of infection.

Dr. H. L. K. Shaw, Albany: I did not mean to criticize the British investigators. They were very fair. Dr. Park's figures correspond exactly with those of Theobald Smith. I do not want to belittle the question of bovine tuberculosis, but the New York State Board of Health can not get more than $7,500 to fight human tuberculosis, and my aim was to emphasize the importance of the fight against human infection.

EMBOLOMYCOTIC ANEURISMS *

DEAN LEWIS, M.D., and V. L. SCHRAGER, M.D.
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Aneurisms developing during the course of endocarditis and occasionally during some of the acute infectious diseases form a distinct group. The frequent involvement of the visceral arteries and the latency of clinical course probably accounts for the relatively small number which have been noted *in vivo*, most of the cases having been discovered accidentally during routine post-mortem examinations. These aneurisms differ in pathogenesis, clinical course, and prognosis from those developing secondary to chronic arterial changes. Enough isolated cases have now been reported to warrant a critical examination of the clinical histories with the view of obtaining data relative to the diagnosis and the lines of treatment to be followed in cases of this type.

Rokitansky[1] as early as 1844 recognized and described true abscesses in the walls of arteries, the sequence of the lodgment of infected emboli.

The first description of an embolomycotic aneurism was apparently made by Koch[2] in 1851. Koch's patient was a young man, 22 years of age. He was being treated for endocarditis, when, without any previous abdominal symptoms, he suddenly died with all the manifestations of intra-abdominal hemorrhage. The autopsy revealed vegetations on the mitral valve and a ruptured aneurism of the superior mesenteric artery. A little later than this English clinicians and pathologists described a series of cases and recognized the relationship existing between embolism and aneurism formation.

ETIOLOGY

In 1853 Tufnell[3] reported an aneurism of the popliteal artery in a young man, aged 25. In the history of this case it is stated that there were "cauliflower-like excrescences" on the aortic valves.

Thirteen years later Oggle[4] stated that there was a definite relationship between aneurisms in young people and verrucous endocarditis. Church,[5] Goodhart,[6] Barlow and other English observers were of the opinion that many aneurisms in young people were of embolic origin.

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* From the Surgical Department of Rush Medical College.

[1] Rokitansky: Handbuch der pathologischen Anatomie, ii, 553.

[2] Koch, L.: Ueber Aneurysma der Art. mes. sup. Inaug. Diss., Erlangen, 1851.

[3] Tufnell, J.: The influence of Vegetations on the Valves of the Heart in the Production of Secondary Arterial Disease, Dublin Quart. Jour. Med. Sc., 1853, xv, 371.

[4] Oggle, J. W.: Med. Times and Gaz., 1866, i, 196.

[5] Church. W. S.: The Formation of Aneurisms and Especially Intracranial Aneurisms in Early Life, Rep. St. Bartholomew Hosp., 1870, vi, 99.

[6] Goodhart, J. F.: Cases of Aneurism from Embolism, Tr. Path. Soc., London, 1877, xxviii, 106.

Ponfick[7] and Eppinger[8] were the first, however, to make careful anatomic examinations of aneurisms of this type. The former found in one of the early cases of aneurism of the cerebral vessels studied by him a pointed, calcified embolus projecting through the arterial wall into the cavity of the false aneurism. He suggested a purely mechanical causation and believed three things necessary for the development of an aneurism of this type: (1) a calcified, pointed, barbed embolus; (2) lodgment of the embolus at the bifurcation of a vessel; (3) loose connective tissue surrounding the vessel, and not resistant tissue which could afford some support to the arterial wall. He cites in support of the third requirement that embolomycotic aneurisms do not occur in the renal vessels, although pointed, calcified emboli must lodge there, while they are relatively common in the vessels of the loose cellular tissues about the spleen and in the mesentery, and still more common in the vessels of the soft brain tissue.

This traumatic or mechanical explanation did not suffice for all aneurisms of this type, for cases were frequently found in which a soft embolus was found at the site of beginning aneurism formation. Eppinger, employing reliable bacteriologic technic, could establish a direct relationship between the embolus at the site of aneurism formation and the endocardial vegetations, as he could demonstrate similar bacteria in each. He believed that, as the result of lodgment of an infected embolus, an exudative periarteritis and later a mesarteritis developed, that a part of the elastic and muscular elements were destroyed by bacteria and their toxins, and that the remaining parts of the media and adventitia were forced outward to form the sac of the aneurism. He suggested that the term "embolomycotic," embracing both the embolic and infectious nature of the lesion, be applied to aneurisms of this type.[9]

The suggestion that an aneurism might follow the lodgment of a benign embolus, the dilatation being due to the sudden increase of pressure proximal to the point at which the embolus lodged, cannot be accepted. If aneurisms could be caused in this way, they would certainly develop frequently after the ligation of vessels, and this practically never occurs unless infection develops at or proximal to the point of ligation.

We believe, after an examination of the literature and of the cases herewith reported, that this type of aneurism may develop in one of three ways. Most commonly they follow an endarteritis associated with lodgment of infected emboli at the bifurcation of arteries. The process, beginning in the intima, reaches the membrana elastica interna, which is destroyed by the infection permitting of either a localized or generalized distention of the arterial wall. Extensive destruction of the elastic fibers was easily demonstrated in the brachial artery examined by us by Weigert's stain. The observations made by Ponfick and Thoma[10] of calcified emboli in the arterial wall and projecting into the aneurism demonstrate the possibility of traumatic origin. Gambaroff[11] suggests the lodgment of either an infected or bacterial embolus within the media, the embolus passing in through the vasa vasorum. An aneurism developing after the lodgment of the embolus in the media would probably be of the dissecting type.

A few cases of aneurism have been reported which developed during the course of infectious diseases, unaccompanied by endocardial changes. E. Ruge reports an aneurism of a coronary artery in a boy, aged 12, which developed during suppurative osteomyelitis, and Cathcart[12] an aneurism of the femoral artery during typhoid fever. Streptococci were found in the wall of the aneurism in the case observed by Ruge. Cases such as these and those in which the aneurism develops in the course of an artery, rather than at the bifurcation, suggest other etiologic factors. Some of the aneurisms which are regarded as of embolic origin may be due to the arterial changes which have been described by Wiesel[13] during infectious diseases in which embolism can be excluded. As a result of his studies Wiesel comes to the following conclusions:

> 1. During the course of various infectious diseases well-defined pathologic changes occur in the arteries. These, at first limited to the media and in the majority of cases confined to it, consist of degeneration of the musculature and of the elastic fibers. Degeneration occurs in foci, which may be quite numerous in the separate vessels, and leads in severe cases to an actual necrosis of the vessel wall. Healing may occur by scar formation or *restitutio ad integrum*. If the process extends to the intima, cicatricial changes occur and the vessel is permanently damaged. In advanced cases the changes may be recognized macroscopically.
>
> 2. The changes affect all arteries up to a certain caliber (about that of a digital artery), the distribution of foci varying from case to case, the aorta, cerebral and cardiac vessels being, however, most frequently involved.
>
> 3. The cases may be separated into two groups: those associated with especially marked involvement of the elastic elements as in diphtheria, typhoid fever, influenza and pneumonia, and those with most marked changes in the media, as in scarlet fever and septicopyemia.

This work has been cited in detail to show the frequency of arterial changes in infectious diseases. It is quite possible that some of the aneurisms in these diseases have followed these changes, which apparently bear no relation to embolism.

Clinically, embolomycotic aneurisms differ from those following chronic arterial changes: (1) In developing at an earlier age; (2) in frequently being multiple; acute and chronic forms often occurring in the same individual; (3) in the frequent involvement of visceral arteries; and (4) in the tendency to remain small.

It is often difficult to determine the etiologic factors in aneurism in the young. A number of cases are reported in which no satisfactory explanation is given as to the cause. Congenital aneurisms, described by Kussmaul and Meyer and ascribed by Eppinger to an inherent weakness of the arterial wall, are considered by Romberg to be of infective origin. Astley Cooper observed an aneurism of the anterior tibial artery in a boy aged 11, and is responsible for the statement that Mr. Clive had ligated the same artery in a boy (age not stated) for an aneurism which had existed in the upper part of the foot for two years. Cooper is reported to have said that he had been told of two instances of aneurism in children, one involving the carotid, the other the popliteal artery. A definite etiology was not given for these cases. Keen[14] describes a brachial and thoracic aneurism in a girl aged 18 without any heart changes, and also describes one of one of the interosseous vessels of the hand in a young girl. The last was probably of traumatic origin.

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[7] Ponfick: Ueber Embolische Aneurysmen, nebst Bemerkungen über das acute Herz-Aneurysma, Arch. f. path. Anat. u. f. klin. Med., 1873, lviii, 528.

[8] Eppinger, H.: Pathogenesis (Histogenesis und Aetiologie) der Aneurysmen einschliesslich des Aneurysma equi verminosum, etc., Arch. f. klin. Chir., 1887, xxxv, 404.

[9] The possibility of the embolic origin of aneurisms has been recognized by veterinarians for a long time. These aneurisms are relatively common in horses, the anterior mesenteric artery being most commonly involved and the *Strongylus armatus* being found in the sac. Such cases have been described by Bollinger and are mentioned in the ordinary text-books of veterinary medicine.

[10] Thoma: Ueber die Aneurysm, Deutsch. med. Wchnschr., 1889, Nos. 16-19.

[11] Gambaroff, G.: Ein Fall von Rupturaneurysma der Aorta infolge von infektlöser hematogener Mesaortitis, Beitr. z. path. Anat. u. z. allg. Path., 1906, xxxix, 94.

[12] Cathcart, R. S.: False Aneurisms of the Femoral Artery following Typhoid Fever, South. Med. Jour., 1909, ii, 593.

[13] Wiesel, J.: Die Erkrankungen arterieller Gefässe im Verlaufe akuter Infektionen, Ztschr. f. Heilk., 1906, xxvii, 262.

In 1903 Le Boutillier[15] published an article dealing with aneurism occurring in early life. He collected reports of 60 cases, 17 of which involved the thoracic and 6 the abdominal aorta. The remaining 37 involved vessels other than the aorta. In 7 of the cases in which the aorta was involved there was either a recent endocarditis or thickened plaques on the valves. Similar conditions were found in 11 of the 37 cases in which vessels other than the aorta were involved.

Table 1 demonstrates the frequent occurrence of *embolomycotic aneurisms in those who are relatively young.* The age of 57 of the 65 patients, including the cases observed by us, have been mentioned.

TABLE 1.—AGES AT WHICH EMBOLOMYÇOTIC ANEURISMS OCCUR

Age.	No. Cases.	Age.	No. Cases.
1 to 10	6	31 to 40	9
11 to 20	15	41 to 50	4
21 to 30	22	51 to 60	1
			57

About one-third of the cases which have been observed developed during the third decade, and about one-fourth during the second. This is in marked contrast to the age at which aneurisms secondary to chronic arterial changes are most common.

The *direct relationship between endocardial changes and aneurisms in the young is positively demonstrated* by these statistics, and we have to conclude that the most important factor in aneurism formation in the young is endocarditis, trauma being the next.

These aneurisms are much more common in the male than in the female. The sex has been mentioned in 57 cases, 41 patients being males, 16 females. In the 14 cases of endocarditis recently studied by Rosenow, 6 patients were males and 8 females. The great preponderance of males afflicted with embolomycotic aneurism suggests the possibility of some determining factors in the development of this type of aneurism. We have attempted to determine whether or not there might be some factors which would favor the lodgment of emboli or favor aneurism formation in the male, but the histories have not been complete enough in most cases to enable us to draw any conclusions as to the blood pressure or chronic renal changes.

We have collected, including the cases observed by us, reports of 97 aneurisms of this type. They occurred in 65 patients, the aneurisms frequently being multiple. The average age of 57 patients (the age of 8 not being mentioned) is about 23 years. The age of the youngest *patient is 5 years, that of the oldest 53.*

LEWIS AND SCHRAGER'S CASES

The clinical course of aneurisms of this type is well illustrated by the cases observed by us, abstracts of the histories of which follow:

Case 1.—*Patient.*—M. Q., a Swede, aged 43 years, was admitted to Dr. Sippy's service at the Presbyterian Hospital April 3, 1908. He had had four distinct attacks of acute, articular rhuematism. Venereal diseases were denied. For several years he had suffered with precordial pain and palpitation of the heart. The symptoms had recently become so severe that he was obliged to quit work.

Examination.—When the patient entered the hospital he complained of precordial pain, palpitation of the heart, and general weakness. He was fairly well nourished; there was some puffiness of the eyelids and some anemia. The pupils reacted to light and accommodation. Eye-grounds were negative, vision good. The nasopharynx and lungs were negative. Cardiac dulness extended half an inch beyond the left mammary line. Auscultation revealed a presystolic murmur, a snappy first tone and a diastolic rumbling at the apex which was transmitted upward.

Course of Disease.—May 20, 1908: Patient complained of a sharp pain in the left hypochondrium associated with a rise of temperature. The left kidney became tender and the urine contained a large number of red blood corpuscles.

May 31, 1908: Patient had a severe chill, accompanied by a rise of temperature, the left kidney becoming tender. Temperature dropped to normal, June 1.

June 2, 1908: Slight rise of temperature and a sudden, violent pain in the left antecubital fossa.

June 21, 1908: A distinct aneurism, the size of a goose-egg, had formed in the left antecubital fossa at the bifurcation of the brachial artery. The aneurism had developed to this size in nineteen days.

July 12: The aneurism had not increased much in size for about three weeks, but on this date, because of the pain occasioned by it, a proximal ligation of the brachial artery was performed under cocain anesthesia. The pain promptly subsided and in about four weeks the aneurism could be pronounced healed.

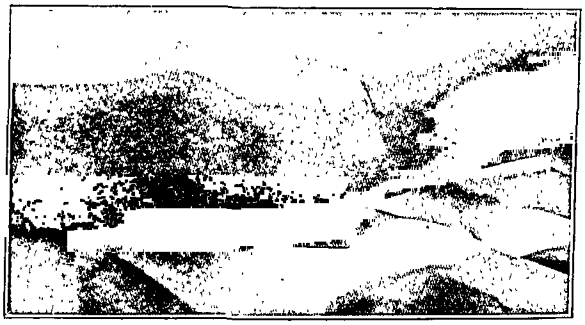

Fig. 1.—Aneurism at bifurcation of brachial artery on day after operation.

August 30: The patient complained of severe pain in the right antecubital fossa. Localized tenderness and some edema developed. The patient frequently complained of pain in the epigastric and hypochondriac regions. These were paroxysmal in character and associated with chills and fever; often followed by blood in the urine. The patient gradually grew worse, became edematous, dyspneic and cyanotic, developed hematuria and hemoptysis, and died Feb. 6, 1909.

Cultures were made at different times from the blood in the aneurismal sac by Dr. E. C. Rosenow. All were sterile. On one occasion, just after a pulmonary infarct, the *pneumococcus was recovered from the general circulation,* but this was the only time. Blood-pressure varied from 140 to 165 mg. of mercury. Before death the site of the aneurism felt like a long, hard connective tissue mass. The radial and ulnar pulses had not returned. Sensation in the hand and temperature of the same were not affected by ligation of the artery.

Autopsy.—This, performed by Dr. Evarts Graham twelve hours after the patient's death, revealed the following: A puckered scar in apex of the left lung; pleural adhesions on the right side; clear fluid in the left pleura; adhesive pericarditis; *calcified vegetations on mitral valve;* enlarged liver with a few scars on the surface. The spleen weighed 780 gm. and was divided into three lobes by bands of connective tissue which ran a quarter of an inch into the splenic tissue. A recent infarct was found in the middle segment. Several scars were found in both kidneys. A recent aneurism, the size of a hickory nut, was found on one of the branches of the superior mesenteric artery. It was a saccular aneurism, the cavity being filled with a laminated clot. The brachial artery at the site of the aneurism was isolated with considerable difficulty from the surrounding tissues, which seemed to form part of it. The brachial artery immediately above and below the point of ligation was patent. Blood-cultures made by Drs. Schrager and Clements after death reveals streptococci and pneumococci.

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[14] Keen, W. W.: Two Cases of Aneurisms in Girls of 18 and 8 Years of Age, Med. News, 1887, li, 725.

[15] Le Boutillier, T.: A Case of Aneurism of the Transverse Portion of the Aortic Arch in a Girl Nine Years of Age, with Table of Reported Cases under Twenty Years of Age, Am. Jour. Med. Sc., 1903, cxxv, 778.

As bacteria were not recovered from the aneurism, the entire mass was imbedded in celloidin and sectioned serially with a view of determining whether or not the aneurism was of a traumatic type, due to perforation of the arterial wall by a pointed, calcified embolus, similar to the endocardial vegetations. Every fifth section was mounted and studied, but no embolus was found. The dilated lumen of the vessel involved was closed by a thrombus, which had become detached from the intima during the process of imbedding and cutting. The arterial wall showed marked changes. The intima was practically destroyed; the elastic fibers of the membrana elastica interna took the stain poorly and were broken up into groups. Bundles of fibers of the media were separated from each other by groups of leucocytes and small, round cells, the histologic picture sugesting that the aneurism might have been of the dissecting variety.

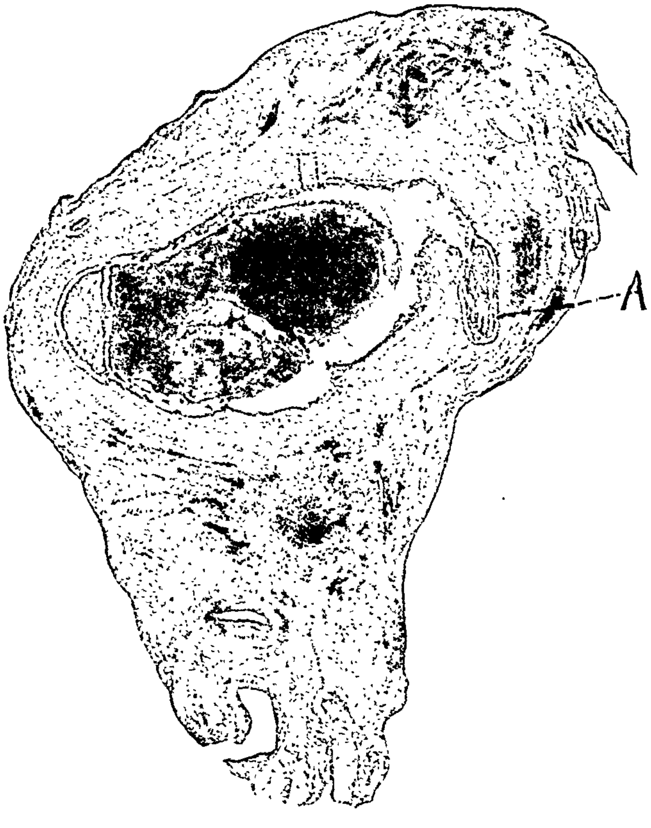

Fig. 2.—Cross-section of brachial aneurism seven months after ligation. A indicates point at which rupture of the arterial wall occurred.

CASE 2.—*Patient.*—A young man, aged 21, was admitted to Dr. Billings' service at the Presbyterian Hospital, April 23, 1908. He gave a history of several attacks of acute articular rheumatism. Two weeks before admission to the hospital he complained of sudden, severe pain just above the left hip-joint. A swelling in which the patient stated that he had noticed pulsation soon developed at the site of the pain.

Examination.—The swelling, situated above and to the outer side of the left trochanter, was as large as a medium-sized grapefruit. It had an expansile pulsation, and a distinct thrill and bruit could be elicited over it. Pulses in popliteal vessels were equal and of the same frequency. Physical examination of the heart revealed the following: Apex-beat fifth interspace just inside the nipple line; no thrill; dulness extended 1 cm. to left of mammary line, to the right sternal border, and above to the third rib. A distinct, loud diastolic murmur was heard over the aortic area and along sternum downward, but this was not transmitted along the vessels of the neck and was heard but faintly at the apex. Capillary pulse present in fingers. Regular water-hammer pulse.

Course of Disease.—May 12, 1908: Needle introduced into the swelling revealed bright red blood. Blood obtained at depth of 3 cm. under pressure. Cultures from this blood positive, a Gram-positive diplococcus in chains of 6, 8 and 10 being isolated. The diplococcus grew well on blood-agar, plain agar, Loeffler's blood serum and in bouillon.

May 29, 1908: The character of the swelling had changed. It had become more extensive and decidedly boggy. It had extended upward, and just below the crest of the ilium there was a marked tenderness. Evidently the aneurism had ruptured.

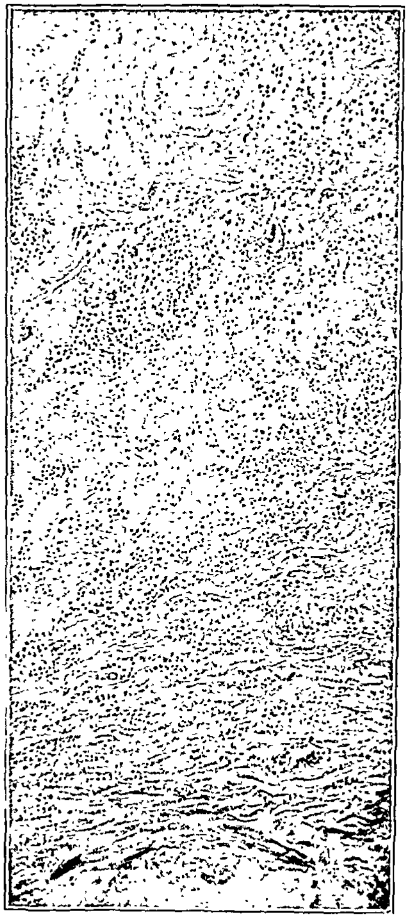

Fig. 3.—Cross-section through wall of artery, showing the bundles of the media separated by groups of leucocytes and small round cells.

June 16, 1908: A soft, pulsating mass, the size of a walnut, developed under the left jaw. No distinct fluctuation.

July 19, 1908: Patient suddenly developed a right-sided hemiplegia, became comatose and died. An autopsy was not permitted, but the clinical findings were definite enough to warrant a diagnosis of aneurism of the gluteal artery.

CASE 3.—*Patient.*—A man, aged 36; no previous history of rheumatism. Five months previous to the beginning of present illness the first lower molar tooth on the right side ulcerated. The tooth was crowned, but the crown had to be removed one month later to let out the pus. It was soon replaced, no trouble developing until one week before death. On Jan. 23, 1909, patient consulted Dr. Slaymaker, complaining of soreness of the throat, running of nose, severe muscular pains, backache and prostration. A probable diagnosis of influenza was made, but the patient grew worse. He entered the Presbyterian Hospital four days later.

Examination.—The spleen was palpable, but there was no agglutination of typhoid bacilli by the serum. No heart murmur detected. The leucocyte count was 7,950 (four days later 12,380), hemoglobin 76. No malarial parasites. Urine negative.

Course of Disease.—On Feb. 19, 1908, there was severe pain over kidneys and right side posteriorly, requiring morphin for relief. Urine, previously normal, now contained albumin and a large amount of pus, many leucocytes, granular and blood casts. There were numerous small petechial hemorrhages beneath the skin. A distinct systolic murmur transmitted to the left was heard at the apex. From this time on the patient failed rapidly, the clinical picture being that of a severe infection. Three days before death he developed a left hemiplegia. The petechiæ became so numerous that a large part of the body was covered by them; conjunctival hemorrhages were also present.

Two blood cultures during life and cultures after death revealed a staphylococcus.

Anatomic Diagnosis.—Alveolar abscess, acute mitral ulcerative endocarditis, embolomycotic aneurism of the superior mesenteric artery, thrombosis of the splenic vein, multiple infarcts of the spleen and kidneys, cloudy swelling and fatty degeneration of the liver, myocardium and kidneys; icterus, anemia and emaciation; multiple hemorrhages of skin, conjunctivæ, serous and mucous membranes, endocardium, myocardium, adrenals and kidneys, hyperplasia of the mesenteric lymph nodes and spleen; lobular pneumonia; emphysema of the lungs.[16]

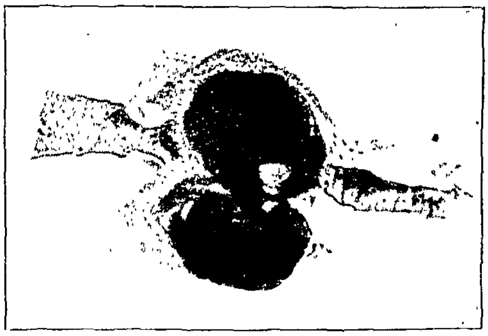

Fig. 4.—Aneurism of superior mesenteric artery discovered at autopsy held on patient seven months after ligation of brachial artery.

DISTRIBUTION

The following table, including 92 aneurisms collected from the literature and the 5 observed by us, demonstrates well the frequency with which visceral vessels are involved.

TABLE 2.—RELATIVE FREQUENCY WITH WHICH THE DIFFERENT VESSELS ARE AFFECTED

Superior mesenteric	25	Internal carotid	1
Cerebral	22	Subclavian	1
Aorta	12	Axillary	1
Femoral	9	Radial	1
Brachial	8	Innominate	1
Splenic	5	Vertebral	1
Popliteal	2	External iliac	1
Ulnar	2	Renal	1
Gluteal	2		
Common iliac	2		97

The following cases are cited to show the number of aneurisms that have been observed in a single patient. In one of Libman's[17] cases there were four aneurisms of the superior mesenteric artery, a fifth on the right branch of the hepatic artery, and a sixth on the right femoral. Before death, the patient developed hemiplegia with aphasia, probably due to rupture of an aneurism of the left Sylvian artery. In the case reported by McCrae,[18] there were five distinct aneurisms of the ascending aorta. In Osler's case there were four aneurisms on the arch of the aorta.[19]

This distribution is in marked contrast to that of the ordinary type of chronic aneurism, as is shown by the statistics compiled by Crisp. Among the 551 aneurisms, reports of which were collected by him, there is not a single instance of involvement of the superior mesenteric artery, and but seven instances of involvement of the cerebral vessels; while aneurisms of the femoral, carotid, subclavian, innominate and axillary arteries are common. Aneurisms of the superior mesenteric artery must be very uncommon, for von Schrötter[20] states that there was but a single instance of aneurism of the superior mesenteric artery among 19,300 cases which came to autopsy at the general hospital in Vienna during a period of ten years.

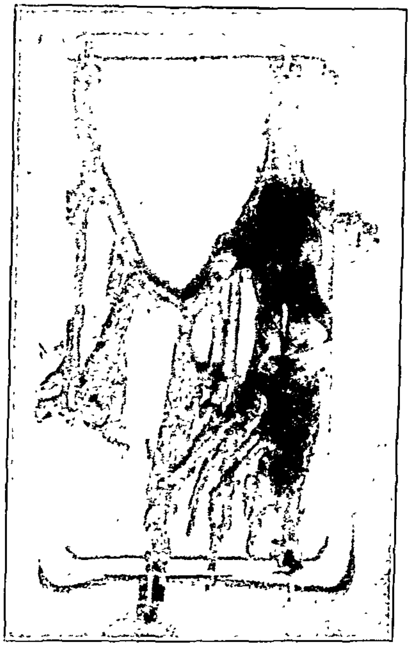

Fig. 5.—Two small aneurisms of the superior mesenteric artery. These aneurisms had caused no symptoms, being discovered during a routine post-mortem examination.

SYMPTOMS

Most of the few cases of aneurism of the superior mesenteric artery that have been published have been of little more than pathologic interest, as they were found during routine post-mortem examinations, and von Schrötter's statement holds true, that these aneurisms give rise to no characteristic symptoms and are usually not suspected until symptoms of fatal intra-abdominal hemorrhage develop.

Gallavardin[21] in 1901 collected reports of 23 cases of aneurism of the superior mesenteric artery from the literature, the etiology of which could be established in 16. Nine of the 16 cases were undoubtedly caused by the lodgment of infected emboli at the points where branches were given off.

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[16] These two cases have been noted in the anatomic diagnosis of two of the cases studied by E. C. Rosenow: Immunological and Experimental Studies on Pneumococcus and Staphylococcus Endocarditis (Chronic Septic Endocarditis), Jour. Infect. Dis., April 1, 1909, vi, 245.

[17] Libman, E.: Cases of Mycotic Aneurisms, Tr. New York Path. Soc., May, 1905.

[18] McCrae, John: A Case of Multiple Mycotic Aneurisms of the First Part of the Aorta, Jour. Path. and Bacteriol., 1905, x, 373.

[19] Osler: The Gulstonian Lectures on Malignant Endocarditis, Brit. Med. Jour., 1885, i, 469.

[20] Von Schrötter: Gefässerkrankungen, Nothnagel's Specielle Pathologie und Therapie, 1898, xv, 271.

[21] Gallavardin: Aneurysmes des artères mésentériques, Gaz hebd. de méd. et de chir., 1901, vi, 973.

In analyzing the symptoms presented by aneurisms of the superior mesenteric artery, it is soon discovered that there is nothing characteristic, and that but in few cases has the character of the swelling, which could be palpated, been definite enough to warrant a diagnosis of aneurism. The 2 cases observed by us ran a latent course, nothing developing which suggested aneurism. The patients frequently complained of paroxysms of abdominal pain, indefinitely localized, which we believe was caused by infarction of the spleen and kidneys. Koch's case, the first reported, presented no symptoms until rupture occurred. Some of the cases have been accompanied by paroxysms of excruciating abdominal pain. Duckworth's patient[22] complained of pain in the region of the navel which was so severe that he could not lie down, and his rest was seriously interfered with. Five days after this pain developed, pulsation could be noted in the region of the navel. In Baccelli's case the pain, coming on in paroxysms, was referred to the epigastrium. Whittier[23] reports an interesting case in which an aneurism of the superior mesenteric artery ruptured, dissecting between the layers of the mesentery until it formed a large hematoma in front of the left kidney. This patient complained frequently of severe abdominal pain, each paroxysm being associated with collapse and an enlargement of the palpable mass in the abdomen. All these symptoms were apparently due to fresh hemorrhage from the aneurism. Abdominal pain referred to the umbilicus was probably the most important clinical feature of the cases observed by Jacobson, Duckworth, Baccelli, Whittier, Rehn (reported by Stern)[24] and Gabriel.[25] In 4 of these cases (Duckworth, Baccelli, Rehn and Gabriel) a mass situated close to the navel, usually a little to the right and below, could be palpated. In the case reported by Whittier, mentioned above, the mass which followed rupture of the aneurism developed in front of the left kidney and dissected downward toward the left iliac fossa. In 2 of the cases (Duckworth, Baccelli), the swelling pulsated, the pulsations being characteristic enough to warrant a diagnosis of aneurism.

In but 2 of the cases collected by Gallavardin were there pressure symptoms. In the case reported by Wilson the aneurism compressed the common bile duct, causing jaundice, while in the case observed by Burney Yeo, the aneurism compressed the renal vessels, uremia presumably developing as a consequence. In none of the cases has there been sufficient interference with the circulation to cause necrosis of the intestinal wall.

While the clinical picture of these aneurisms is not characteristic, severe epigastric pain, associated with the development of a mass to the right of and below the navel, in a patient suffering with endocarditis should always arouse suspicion of an aneurism of the superior mesenteric. Unless a definite expansile pulsation were present, usually not the case, it would be impossible to exclude metastatic abscess of mesenteric lymph nodes.

Aneurisms of this type never become very large. The aneurisms of the superior mesenteric artery (Figs. 4 and 5) were about the size of a small hickory-nut, the brachial aneurism the size of a goose-egg. The case reported by Osler, in which one of the aneurisms was as large as a billiard-ball, is probably the largest embolomycotic aneurism observed. The pulsating hematomas formed after rupture of the sac, as in the gluteal aneurism observed by us and in the superior mesenteric aneurism reported by Whittier, became very large, in the latter case filling almost the entire half of the abdomen. These cannot, of course, be included, when speaking of the size of the aneurism.

The fact that these aneurisms tend to remain small or rupture before they attain to any great size accounts for the fact that they cause so few symptoms when situated upon abdominal or cerebral vessels, the symptoms of hemorrhage associated with rupture often being the first indication of the existence of an aneurism.

BACTERIOLOGY

Eppinger was the first to demonstrate bacteria in the wall of the aneurism, and to show the bacteriologic relationship between the vegetations on the heart valves and the clot in the aneurism. He found groups of micrococci occurring singly or in groups, but did not go further in their identification. Buday,[26] in his case, made cover-slip preparations from the endocardial vegetations and thrombus and found in each streptococci, staphylococci and the *Bacillus pyogenes fœtidus.*

Twelve cases have been reported in which a careful bacteriologic examination has been made of blood from the general circulation or from the aneurismal sac. In 6 cases the streptococcus has been isolated, in 5 the staphylococcus. In the case reported by Gabriel streptococci were found in the sac and staphylococci in the circulation. In 1 case the bacillus of influenza was found in the vegetations.

In 2 of the cases observed by us blood cultures made by Dr. E. C. Rosenow revealed the pneumococcus. In 1 of these the cultures were positive but once, and it was impossible to cultivate bacteria from the aneurism, although both streptococci and pneumococci were demonstrated in the blood obtained at autopsy. In the third case staphylococci were isolated from the blood.

Holst[27] reports a case of aortitis with two aneurisms, probably due to the gonococcus, as the lesions developed during a gonorrheal arthritis. It is not stated, however, whether the gonococcus was recovered from the aneurisms or blood.

Patients suffering with aneurisms of this type are apt to be in a critical condition and will not survive a long operation or one associated with much dissection. It must be remembered that the aneurism frequently contains bacteria and that any operation on the tissues adjacent to and composing the aneurism may so reduce their resistance as to cause infection and secondary hemorrhage. The popliteal aneurism observed by Tufnell, one of the earliest cases reported, was evidently cured spontaneously. In Goodhart's case, a brachial aneurism was evidently cured by digital compression applied for seven hours. The patient soon died, however, with the symptoms of cerebral hemorrhage. The brachial artery and, later, the femoral artery were ligated in the case observed by Langton and Bowlby,[28] with good results, but the patient died later of complications associated with endocarditis.

In Canon's case[29] the external iliac artery was ligated for a femoral aneurism, but soon after a brachial aneurism developed, for which proximal ligation was performed, the patient dying ten days later. In one of Libman's cases (a femoral arteriovenous aneurism) the external iliac artery was ligated in two places and divided with the intention of tying the femoral artery below the sac. Resection of the lower end of the sac was attempted, but it was perforated and profuse hemorrhage ensued, necessitating ligation of both the femoral artery and vein. The patient died a few hours later. In another case reported by Libman (operation performed by Lilienthal), the aneurism was incised, the clot removed and the cavity packed. Fifteen days later hemorrhage occurred from the aneurismal sac, which was controlled by packing. Twelve days later the femoral artery was ligated, the hemorrhage having been found to come from a small rupture in the wall of the artery. Six days later the patient died of pneumonia.

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[22] Duckworth, Dyce: Infective Endocarditis, Med. Press and Circular, 1901, cxxii, 625.

[23] Whittier: A Dissecting Mesenteric Aneurism, Boston Med. and Surg. Jour., 1887, cxvii, 446.

[24] Stern, K.: Operation eines Aneurysma embolo-mycoticum einer Mesenterialarterie, Beitr. z. klin. Chir., 1908, lvii, 315.

[25] Gabriel, G.: Zur Diagnose des Aneurysma der Arteria Meseraica, Wien. klin. Wchnschr., 1901, xiv, 1051.

[26] Buday: Aneurysmen der Arteriæ iliacæ communis, verursacht durch einen septischen Thrombus, Beitr. z. path. Anat. u. z. Allg. Path., 1891, x, 187.

[27] Holst: Article Reviewed in Deutsch. med. Wchnschr. Literatur-Beilage, 1901, p. 107.

[28] Langton, J., and Bowlby, A. A.: Mycotic-Embolic Aneurisms, Brit. Med. Jour., 1882, ii, 1032.

[29] Canon: Bacteriologische Blutbefunde bei Blutvergiftung und Amputation, Mitt. a. d. Grenzgeb. d. Chir. u. Med., 1902, x, 411.

The brachial aneurism observed by us was treated by proximal ligation under cocain anesthesia. Clinically, the result was perfect. The gravity of the prognosis is indicated by the fact that the patient lived but seven months after ligation of the artery, which is the longest time that any patient operated on for an embolomycotic aneurism associated with endocarditis has lived.

Cathcart reports an interesting case of an aneurism of the femoral artery, which developed during typhoid fever. We have classified this as an embolomycotic aneurism, as we believe it to be due to lodgment of bacterial emboli in the vessel wall. He attempted a Matas operation, but the hemorrhage through the recurrent circulation was so severe that the femoral, the deep femoral, the superficial circumflex iliac, the superficial external pudic, the external iliac, the deep epigastric and the deep circumflex iliac arteries all required ligation. Gangrene later developed and an amputation was performed at the junction of the upper with the middle third of the thigh.

In three cases operations have been performed for aneurism of the superior mesenteric artery. In two of these (Libman, Baccelli) the operation has been merely exploratory. In the case reported by Stern (operation by Rehn) the diagnosis of metastatic abscess had been made, but the operation revealed an aneurism of a branch of the superior mesenteric artery. The branch on which the aneurism had developed was ligated and the cavity of the aneurism packed. The patient made a good recovery, but six weeks later another operation was performed for a second aneurism of the superior mesenteric artery. During the operation the abdominal aorta was opened, necessitating ligation. The patient died shortly after leaving the table.

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FIELD TRAINING OF MILITIA SURGEONS

FRANK W. HENDLEY, M.D.
Major, Medical Corps, Ohio National Guard
CINCINNATI, OHIO

The thorough systematic training which has been given to officers of the army during recent years, in the various service schools, and by the working out of field problems with troops, has undoubtedly greatly increased the efficiency of the army in all its departments, while the militia, having participated in many field maneuvers, has gained much valuable experience, which is rapidly transforming it into a valuable factor of the national defense.

There are so many things that can be learned only by experience, and so many features which are new, experimental and undetermined, in the modern development of the science of war, that it is only by practice under conditions simulating a war status, that our armies can keep abreast of the progress of the times and maintain the high standards of the past.

Practice under service conditions is as necessary to the various staff departments as to officers and men of the fighting line, and is much more difficult to secure.

While quartermasters and commissaries gain their required practice in all maneuvers, medical officers and the hospital corps have very little opportunity for special training except to a very limited extent, as in maneuvers their services have been required in the actual care of the men of their commands to which they are attached, and there is no time to attend lectures or to execute field problems of medical service appertaining to brigade or division movements.

In the large joint maneuvers the medical department could secure such experience only by the doubling of the present force of medical officers, one set to perform the necessary regimental service with the commands, and the other to carry out the suppositional first aid behind the firing line, with the service of the collecting, dressing and ambulance stations, and the transportation to the rear, etc.

It has been recently pointed out by Major Charles F. Mason,[1] Medical Corps, U. S. Army, that for active service medical officers must constitute 1 per cent., and the hospital corps 10 per cent., of the entire command, and it is evident from our recent experience that a proportion very near to this is necessary in large maneuver exercises, if the medical department is to perform complete service.

It is because of the small strength of the medical corps and the hospital corps that they have been unable to participate in the great benefits derived from maneuvers up to this time.

Their strength is everywhere too small. For example, the Ohio National Guard, with an authorized strength of 575 officers and 7,801 enlisted men, a total of 8,376, authorizes at present 53 medical officers and 236 hospital corps men. (I refer to Ohio simply because the

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The desired proportion, according to Mason's estimate, would be still larger, being 83 medical officers and 830 hospital corps men.

If we had the increase to that provided by "Field Service Regulations," we could carry out all the details of the service of the medical department with all troops, not only caring for those actually sick, but simulating also the complete service in the rear of the fighting lines.

In the absence of this desired increase of the personnel, the medical department can do little at a maneuver camp except to operate the regimental infirmaries and to conserve the hygiene of the camp and of the men of the command as far as time will permit.

In order to work out their own field problems pertaining to their own department, their only opportunity will be found in the special "Camps of Instruction for Medical Officers," such as were established this year for the first time, these being separate and distinct from the maneuver camps. To secure the benefit of these camps of instruction requires medical officers to perform two separate tours of camp duty, once with the troops to which they are attached, and again in their own special medical camp of instruction.

The question naturally arises whether it is better to have a small, insufficient force and to use it twice, or to create the proper strength to be used once. In active service the full force is necessary; why not provide it now? Many medical officers of the militia cannot afford the time to attend two separate camps.

The creation of three such camps this year enabled 170 militia medical officers, from forty states, to engage in field work such as they had never been able before to practice, and to attend lectures and demonstrations on every detail of their duties in the camp and in the field, their tour of instruction proving of incalculable benefit to all those who were privileged to attend.

While it is to be regretted that only 170 militia medical officers out of the 700 in the United States attended these schools, and that twenty-five states out of the forty sent only three or less, fourteen sending only one, those who did attend are a unit in expressing their appreciation of the value of the practical instruction received and it can be taken for granted that such schools in the future will be crowded to their capacity.

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rism developed, for which proximal ligation was performed, the patient dying ten days later. In one of Libman's cases (a femoral arteriovenous aneurism) the external iliac artery was ligated in two places and divided with the intention of tying the femoral artery below the sac. Resection of the lower end of the sac was attempted, but it was perforated and profuse hemorrhage ensued, necessitating ligation of both the femoral artery and vein. The patient died a few hours later. In another case reported by Libman (operation performed by Lilienthal), the aneurism was incised, the clot removed and the cavity packed. Fifteen days later hemorrhage occurred from the aneurismal sac, which was controlled by packing. Twelve days later the femoral artery was ligated, the hemorrhage having been found to come from a small rupture in the wall of the artery. Six days later the patient died of pneumonia.

The brachial aneurism observed by us was treated by proximal ligation under cocain anesthesia. Clinically, the result was perfect. The gravity of the prognosis is indicated by the fact that the patient lived but seven months after ligation of the artery, which is the longest time that any patient operated on for an embolomycotic aneurism associated with endocarditis has lived.

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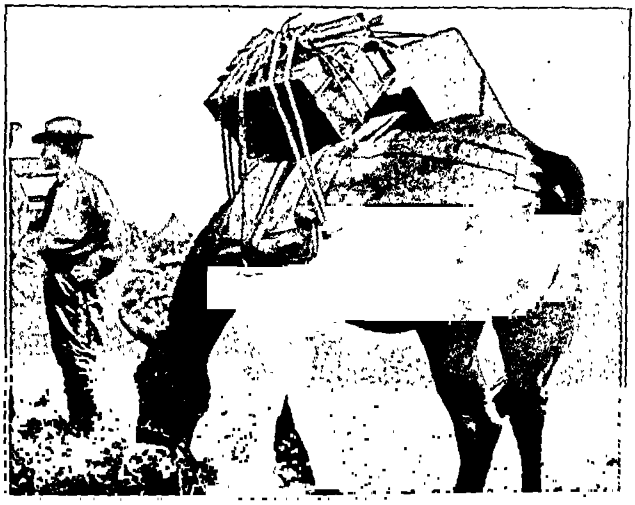
On three days all were engaged in the execution of field problems under the direction of Major P. C. Fauntleroy, Medical Corps, U. S. Army, the commandant.

The first of these, on July 19, was the most extensive, calling for the performance of the work of the medical department of a division of nine regiments, engaged in an attack on the enemy, requiring the establishment of regimental collecting stations, brigade dressing stations, and a division ambulance station, an imaginary field hospital being located in the rear.

The militia officers were assigned as division, brigade and regimental surgeons, mounted hospital corps orderlies furnished; and with the umpires, consisting of the medical officers of the army, and accompanied by ambulances, escort wagon, and a pack-mule train, reached the field of operations after a dusty ride of four miles.

The proper positions being taken in the rear of the division of the army, "Forward" was sounded by trumpet, and all advanced through the woods, fording a stream, and encountering swampy land and almost impassable underbrush, until the cleared land was reached where casualties were to be expected.



U. S. Army pack mule, showing "Arapaho" packed with Varney camp stove, axes, and food chest.

Here the collecting stations were established, following which the dressing stations were located and orders transmitted to the ambulance station to send forward the personnel and equipment for their establishment, which being done, the ground was cleared by chopping down trees to secure space, two tents were erected, an operating table extemporized, beds prepared, instrument cases, medicine chest, and food chest opened in readiness, and a fire started to make coffee and beef-tea.

In the afternoon following this problem a discussion and criticism of the work took place under the direction of Major Fauntleroy, chief umpire, participated in by Capt. C. C. Whitcomb, U. S. Army, and Capt. F. A. Dale, U. S. Army, and various militia officers, in which errors were pointed out, and suggestions made as to improvement of the plan and equipment.

Discussion arose as to whether the ambulance station should not be a brigade unit rather than a division unit, and the opinion was expressed that for carriage on pack-mules the food chest was too large and unwieldy.

The following day (the 20th) all the militia officers were again mounted, and acted as observers in the establishment of a regimental hospital near camp and a dressing station on a hill a mile distant, all the equipment for the complete regulation dressing station, consisting of tent, bedding, medical chest, surgical dressing box, food box, commode chest, stove, buckets, axes, kegs of water, extra litters, etc., being carried on four pack-mules.

Following this the method of packing on pack-mules was exhibited, the construction of the "Arapaho" explained, the method of tying the "diamond hitch" with the lariat, improvised travois constructed, the Varney camp cooker displayed, and instruction given in saddling, mounting and riding horses.

On the 26th field work was again engaged in, the militia officers being assigned as regimental and brigade surgeons, and given details of hospital corps men, with whom search was made through the woods for wounded, represented by tagged hospital corps men, these being given treatment in accordance with the diagnosis on their tags, and removed in ambulances to the camp hospital, where the dressings and extemporized splints were examined and criticized by the umpires, and many valuable suggestions made. It was most interesting to note the ingenuity shown in the treatment of many of these cases.

After this there was hospital corps drill in loading ambulances, carrying by one and two bearers and by litters, and placing wounded men in the saddle.

The regular inspection of the hospital corps, on the 24th, was also studied by the militia officers.

An extremely important element of instruction was derived from observation of the routine operation of the camp, and the actions of officers and men; their careful and exact performance of every detail of sanitary precaution; the constant attention to cleanliness about quarters, kitchens, and at the picket lines; the extreme care given to disposal of wastes and filth; the quiet, orderly and prompt performance of every duty—in short, the magnificent regular army discipline and thoroughness.

As a result of the attention given to sanitation, of course, the camp was free from sickness. All excrement, all urine, and all garbage and refuse being consumed in the incinerators, and all manure dropped at the picket lines being at once removed and burned, it followed that there were very few flies, notwithstanding the fact that in our camp and that of the artillery there was a total of over 400 horses and mules.

Such object-lessons excite admiration and the desire of emulation.

During all lectures, demonstrations, and execution of field problems, the various instructors continually urged the militia officers to ask questions regarding any matters which were not entirely clear, and much valuable data were thus brought out.

All the officers of the army were at all times most courteous, affable, and patient, and the most friendly relations existed.

The foregoing exhibits briefly the extent and scope of the work of instruction provided at this school. The benefits derived from it by all the militia officers who were so fortunate as to participate in the work are enormous and beyond calculation.

The time allotted, two weeks, is all too short for work of such magnitude and variety of detail.

Realizing, however, that few doctors in civil life can afford to devote a longer time to such a camp, in addition to their regular tour of duty with the organizations to which they are attached, I am of the opinion that much of the work done at this camp might profitably be accomplished in a preliminary or preparatory course by correspondence or other satisfactory means, thus leaving the two weeks of camp for the more advanced work, the practical field maneuvers, hospital management, command of men, etc.

A scheme providing a progressive course of training in the preliminary branches of the work, covering six months or more, and requiring a certain degree of proficiency to entitle one to the privilege of attending the two weeks of camp of instruction, should meet with great favor among medical officers of the militia, especially if at the satisfactory conclusion of the entire course some special record of honor was awarded to those who had attained proficiency.

In the absence of such course of training, I would urgently recommend that when another such school of instruction is provided by the War Department every medical officer should be required to attend.

In addition to this, it is imperatively necessary that all medical officers be supplied liberally with the blank forms used by the army, in order that they may become properly acquainted with their use.

Not only do they need each an ample stock of the new cards and other forms of the medical department, but they should have at least a sample set each of many pertaining to the ordnance, commissary, quartermasters, and pay departments—in fact, all that would be required by a company commander or a surgeon in command of a post hospital of the army, as any medical officer is liable to detail at any time to a post where a thorough knowledge of their use is necessary.

RECOMMENDATIONS

1. Medical officers should be increased 50 per cent. and the hospital corps 100 per cent.
2. Training in field service should be provided for the medical corps and the hospital corps.
3. A progressive course of training, covering six months or more, should be provided, to be completed by attendance at a camp school of instruction.
4. Attendance at such school should be permitted only to those who attain proficiency in the preliminary work.
5. The retaining of a commission as a medical officer should be dependent on participation in such systematic course of instruction.
6. Medical officers in states not represented this year should at the next similar opportunity insist on their rights, and not allow their portion of the available fund to be given to their state team at Camp Perry, as occurred in one state in the northwest this year.

2531 Gilbert Avenue.

Correction of Displacement of Uterus Through Inguinal Canal. Single Incision.—Littauer describes a technic which he has applied in twenty-six cases, with satisfactory and durable results, to shorten the round ligaments by access through the inguinal canal after a single incision through the soft parts. In order to accomplish this the laparotomy incision must be in the form of a curve except in the middle of the fascia which are incised horizontally across; on the sides the fibers of the internus can be easily separated, after which the inguinal canal is readily reached by working down with the finger or a sponge between the external and internal oblique muscles. The round ligaments are then treated as with the ordinary Alexander-Adams operation, the peritoneum sutured, the fascia sutured separately, and the round ligament included in the suturing of the external fascia. His communication in *Sammlung klin. Vorträge* reviews other technics while citing the special advantages of the arc incision in combination with the isolated separation of the fibers of the fascia of the externus for the inguinal celiotomy.

Clinical Notes

A NEW DEVICE FOR DROPPING ETHER AND CHLOROFORM

J. G. ROHRIG, M.D.
IOWA CITY, IOWA

I believe that the device herein described and illustrated meets the need for a small, simple, conveniently portable instrument for dropping ether and chloroform (the former especially) continuously on the inhaler mask, the dose being perfectly and easily regulated, and the rate of drop changed any instant without removing the dropper.

This device is composed of a can (Figs. 1 and 2) with regulating mechanism for outlet, tubes for air inlets, and a screw cap for filling. The can is made in half-pound (250 gm.) and quarter-pound (125 gm.) sizes, which have proved the most convenient ones. At the side of this can, near the top, is an opening for outlet (1 c, Fig. 2). Into this opening extends a cone-shaped valve (2, Fig. 2), which is moved into and out of the opening by the finger by means of a lever (5) so arranged that it is convenient for the forefinger of the hand of the operator to remain on it (at 5 c) continually; thus the operator can at any second change the size of the outlet and thus vary the rate of drop from a strong stream to a slow drop or stop it completely by a mere movement of one finger and without removing the dropper from over the inhaler mask. The can is fitted with a screw cap (7) of large opening so that it can be quickly filled. On the side opposite to the outlet are placed two small tubes (8 and 9, Fig. 2) for the inlet of air. One tube has its external opening at top of can (1 d) and terminates near the bottom of the can on the inside. The second tube enters the bottom of the can (at 1 e, Fig. 2) and opens into the can at its top. This prevents the contents from running out if the can is turned on either end, and also allows the vapor generated by the warmth of the hand to escape by one tube while the outlet is closed without forcing liquid out of the can. The screw (5 b) in the lever is adjustable so that the lever always remains where placed, thereby relieving one from the necessity of holding it continuously if it is so desired. If the small hooks with springs are placed over the air inlets and the lever hook closed, the can may be filled and carried in the instrument bag for days without loss. Thus the dropping can may be filled at the office and carried to a private home ready for use.

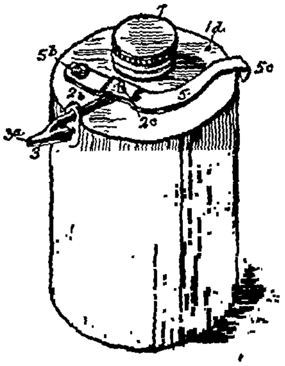


Fig. 1.—Dropper for ether and chloroform.

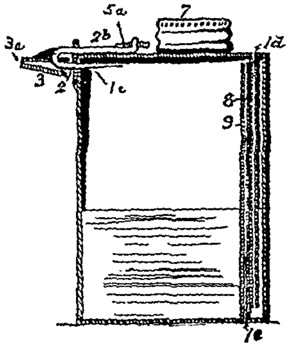


Fig. 2.—Cross-section of dropper.

The can is so arranged that it is conveniently held (Fig. 3). The operator's right elbow rests on the table beside the patient's head and the can is held in *proper* position above the inhaler mask with perfect ease. The rate of drop is properly regulated and the anesthetic is allowed to drop continuously, which is far better and safer than the common method of flooding the inhaler mask at intervals and allowing the liquid to evaporate, the patient breathing pure ether vapor and more or less pure air alternately. This dropping device can be instantly regulated so as to maintain a proper degree of continual anesthesia. When in the beginning the patient vomits, struggles or has a spasm of the glottis, any one of which requires more anesthetic, the finger instantly moves the lever and a proper amount is allowed to fall on the inhaler mask; then the flow may be gradually allowed to return to the proper amount without any extra movements, as of setting the can down, pulling cork, etc.

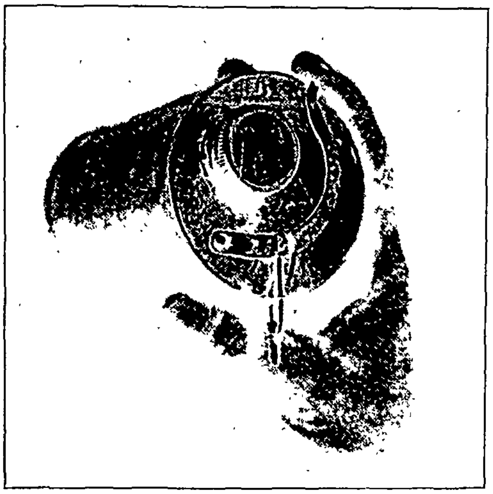


Fig. 3.—Dropper in use.

The claims for this can are as follows:

1. It is safe for the patient because the anesthetic is continuously given and readily regulated.
2. It is small and uncomplicated and, therefore, may be easily carried to a private home or hospital.
3. It is easy to operate, inexpensive, and economical of ether because no excess is poured on at intervals.
4. It drops fast when rapid flow is desired and the flow can be shut down suddenly.

APPARATUS FOR METABOLISM EXPERIMENTS IN MALE INFANTS

FRITZ B. TALBOT, M.D.
Assistant Visiting Physician to Boston Floating Hospital and to the Hospital of the Massachusetts Infants' Asylum
BOSTON

The difficulty of obtaining 24-hour amounts of urine, and the total amount of feces, separately, in babies explains why so few metabolism experiments have been performed during the first year of life. Schabad recently described[1] all the kinds of apparatus which have been used with varying success up to date. The article is very exhaustive and includes his own among other apparatus. These devices are either cumbersome, or difficult to make and procure, and I venture to describe a very simple apparatus which I have used successfully during the past year in collecting the total amount of urine and feces passed by male babies during periods of three days each.

The necessary materials are a small Bradford frame, a towel, two cloth straps each 12 or 14 inches long by 1½ inches wide, safety pins, an ordinary test tube of good glass, zinc oxid surgeons' plaster, and a rubber tube; also a bottle in which to collect the urine, and several wide-mouthed jars in which to collect the feces. The Bradford frame is used because it is easy to handle, and most well-trained nurses are familiar with its use. It is supported on the bed in such a way that it is level and is elevated about six inches above the mattress. The two ends may rest on boxes or rolled-up sheets.

A hole (Fig. 1, A) about three inches in diameter is cut through the cloth of the frame so that it will come under the baby's buttocks; below this the jar in which the feces are collected is placed. A few inches lower down another small hole (Fig. 1, B) about one-half an inch in diameter is cut. The tube through which the urine flows runs through this hole with a gradual but continuous downward incline into a bottle hanging at the side of the bed. The towel (Fig. 1, C) is pinned transversely across the frame with two rows of pins so that the part of the towel attached to the frame is a little narrower than the breadth of the baby's back. The baby is then placed on the towel and the ends are folded over the abdomen and pinned, thus making an abdominal band which extends from the axillæ to just above the groins. This is fastened snugly enough to prevent the body from slipping to either side, and the upper edge is close under the armpits to keep the child from slipping downward.

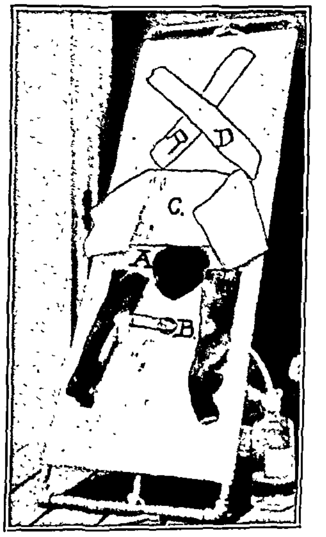


Fig. 1.—General view of the frame used for collecting excreta of male infants. A, hole over which buttocks come; B, small hole through which tube leading from penis is passed; C, towel fastened to frame and which confines the child's trunk; D D, two cloth straps to be pinned transversely across shoulders.

The toes of the stockings are attached to the frame with the legs partially extended, the upper part of the stocking being pinned to the shirt. These stockings are rather loosely knit and act like bags which hold the legs. Two cloth straps (Fig. 1, D) are pinned transversely across the shoulders for greater security in certain cases. The baby is then in a position so that the buttocks remain over the large hole (Fig. 1, A) in the frame, and yet he is not confined enough to prevent a certain amount of exercise, because the legs are only partially restrained and the arms and head can move freely. Babies and children with tuberculosis of the spine are often held in this manner without apparent discomfort for weeks at a time.

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[1] Arch. f. Kinderheilk., 1908, vol. xlviii, 5-6.

The next problem was to devise a method of collecting the urine. This was done by taking an ordinary test-tube and heating it over a Bunsen burner in such a way that the middle of the tube gradually dropped in; then it was drawn slowly out until shaped as shown in Figure 2. It was then filed at (a), the lower end broken off and the broken edges fire-polished. Such a tube is strong and light and can easily be attached to the penis by straps of surgeons' plaster, while the lower end is connected with a rubber tube leading through the hole (Fig. 1, B) to the urine bottle. Before attaching it the penis should be well covered with boric-acid ointment to prevent maceration of the delicate skin. The bottle should be well washed out with an alcohol solution of thymol to prevent putrefaction.

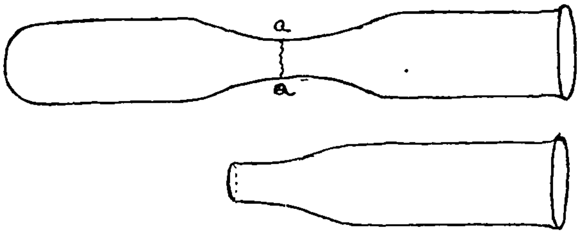


Fig. 2.—Showing method of drawing out heated test-tube so as to encase the penis.

This simple apparatus is very practical because most nurses are familiar with the use of the frame as well as the test-tube. It is light and strong when properly made and there is small chance of losing any of the required excretions. Like all such apparatus, it is open to the criticism that it restricts motion, yet in a small series of selected cases I have seen very little discomfort and no harm from its use.

171 Bay State Road.

UROLOGIC TEST-TUBE HOLDER

G. SHEARMAN PETERKIN, M.D.
SEATTLE, WASH.

This instrument is intended to lessen the difficulties encountered in collecting urine during ureteral catheterization, especially when catheters are retained for long periods, as when testing the functional capacity of each kidney.

Figure 1 shows the holder; the only dimensions noted are those of the opening for receiving test tube, its diameter being ¾ inch. The two projecting prongs are springs; by compressing these, tubes of smaller size may be employed.

Figure 2 shows the test-tube holder in position, and also a metal tent frame (a) constructed of brass, consisting of a center piece 2 inches broad, 24 inches long, and 1/12 inch thick, supported by legs 3/16 inch in diameter and 36 inches from tip to tip, with brass knobs on ends so as not to tear the bed-clothes. The legs being composed of brass, can be easily bent so as to cover persons of varying sizes.

The advantages of this instrument are:

1. When existing pathologic conditions demand general anesthesia, the specimens are not apt to spill nor the catheter to become displaced during the unconscious movements of the patient, and one nurse can readily control the patient if the holders are applied and the knees tied with a broad band of muslin.

2. By additional use of the metal tent frame, the rate, quantity and character of the flow from each catheter can be observed easily by lifting the covers without fear of disturbing the test tube or greatly exposing patient.

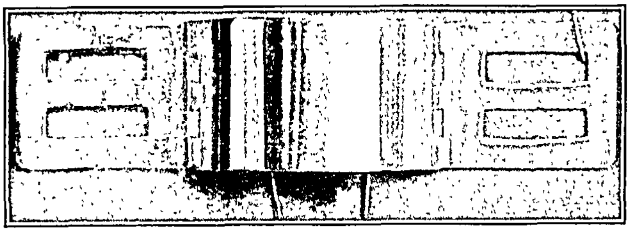


Fig. 1.—Urologic test-tube holder.

3. In employing the test for indigocarmin and phloridizin, the urine must be frequently observed, small quantities taken from receiving receptacle. The ease with which one tube can be substituted for another greatly facilitates this operation.

4. In collecting specimen for microscopic or bacteriologic examination, as in tuberculosis, etc., the possibilities of contamination from outside sources are entirely obviated, since the same centrifuge tube is used to collect as will be employed in centrifugalizing specimen or making culture.

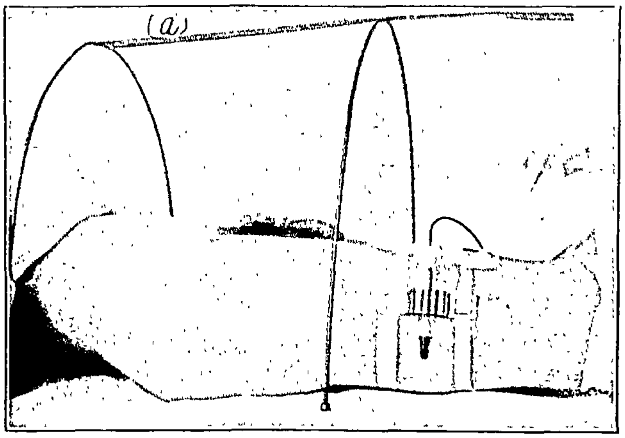


Fig. 2.—Test-tube holder in position; showing also the metal tent frame.

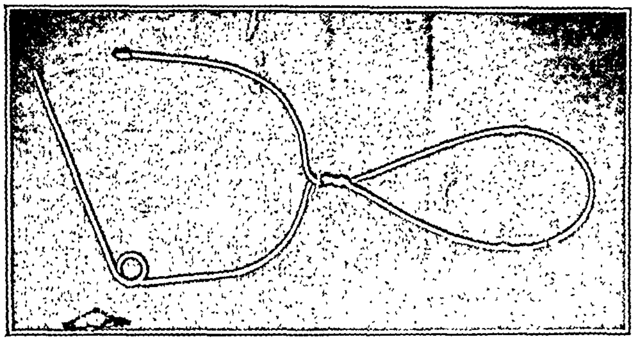
Medical Inspection of Schools in Germany.—Medical inspection and supervision of schools is perhaps more thorough and extensive in Germany than in any other country. Yet even in Germany the system is not complete or uniform. According to the statements of Consul G. N. Ifft (*Public Health Reports*, Oct. 15, 1909), the number of pupils placed under the charge of one physician varies from 1,400 to 22,000, and the salaries from $22.50 to $500 a year. In two cities there are school dentists and in Charlottenburg orthopedic gymnastics are to be given in the schools. The work of the school physician is usually incidental to his general practice. The total pay is determined by the number of classes examined and in Nuremberg amounts on the average to $190 a year. Three examinations of each pupil are required during the first year of school. These are designed to test the fitness of the pupil for the work of the school and consist of a preliminary examination for admission, a second thorough physical examination, and a third in which special attention is directed to the eyes and ears.

A SAFETY-PIN SPRING PROBE RETRACTOR

E. H. THRAILKILL, M.D.
KANSAS CITY, MO.

In the operation for fistula in ano, when the method of excision with the immediate suture is employed, a self-retaining guide is of considerable value, as it renders the services of an assistant unnecessary.

For several months I have been using the simple little instrument here illustrated, which I have found very handy and practical. It is about six inches in length and four inches wide and is made of heavy steel wire, silver-plated. There are no joints or hinges, and the instrument can easily be sterilized.



Safety-pin spring probe retractor.

The method of application is as follows: The probe is released from the hook, passed through the fistulous tract into the rectum, and fastened in the hook again. Then, by taking hold of the handle, the fistulous tract and wall can be firmly held while the diseased tissue is dissected out *in toto*, threaded on the probe.

Owing to the hook and spring resembling those of a safety-pin the name of "the safety-pin spring probe retractor" has been suggested for the appliance. The cheapness, simplicity and effectiveness of the instrument all are points greatly in its favor.

916 East Eighth Street.

A NEW TONSIL KNIFE, WITH GUARD AND RETRACTOR ATTACHMENT *

DANIEL W. LAYMAN, M.D.
INDIANAPOLIS

Dr. Ballenger's clear description of "Tonsillectomy with the Scalpel" and numerous papers by specialists recommending thorough tonsillar enucleation have stimulated men in the use of the knife. This method is advocated as the quickest and most thorough of all procedures. Some of the most skilful users of the knife say that with this instrument the ideal enucleation of the tonsils is accomplished.

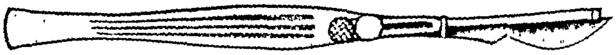


Fig. 1.—Tonsil knife, with guard and retractor.

Like many who use the tonsil knife, I have felt the need of something to guard and retract the anterior pillar, without interfering with the movements of the knife, and without necessitating the use of another instrument in the hands of an assistant.

In a great many cases the anterior pillar overlaps a large portion of the anterior surface of the tonsil. Even after freeing this pillar and pulling the tonsil inward with the tonsil forceps, it is often necessary, in using the knife, to retract the anterior pillar with the flat side of the blade to hold it out of the way, in order to dissect the tonsil at the point of attachment. The use of the side of the knife as a retractor not only interferes with the proper dissection of the tonsil, as there must be a constant retracting force exerted on the pillar to keep it out of the way, but also greatly increases the chances of injuring the delicate muscle of the anterior pillar. Hence I have tried to devise a tonsil knife with a pillar retractor and guard attachment.

The retractor and guard attachment is a blunt, flattened hook adjusted to the side of the knife, and having a lengthwise movement parallel with the knife and also a limited movement in the cutting plane. Such movements are made possible by adjusting to a tonsil knife, between base of blade and beginning of handle, an oblong loop or guide, whose plane is at right angles both laterally and transversely with length of knife. This loop, with the shank of the knife, forms two parallel slots through which is passed the retractor, and which not only limits the retractor's movements in the cutting plane, but also steadies it. The shank of the retractor works through the right or left slot of the aforesaid loop, as the operator may place it. The retractor's lengthwise action is controlled by a set-screw. The retractor being slotted, in its long aspect is guided or held by this screw, which engages the knife at that part of the handle nearest to shank of blade.

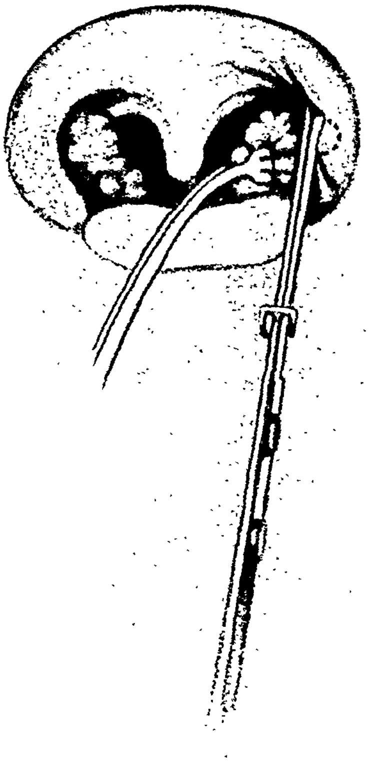


Fig. 2.—Tonsil knife in use.

The knife is best adapted to the sitting posture. The tonsil is first freed from its attachment to the anterior pillar by suitable separators. In most of my cases, after engaging the tonsil with the tonsil forceps, I dissect around the upper half of the tonsil or head, with Kyle's right-angle tonsil knife. In case the plica tonsillaris covers a large portion of the tonsil, I also make an incision at its junction with the anterior pillar. I then regrasp the tonsil, engaging a greater part of the upper part in the tonsil forceps. Then the knife with the guard and retractor attachment comes into play. With the retractor adjusted so that it is freely movable, and the angular blunt hook pulled toward the point of the knife, I insert it behind the pillar.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

In cutting downward or upward, as the operator desires, the guard or retractor retains its position, between the tonsil and pillar, as the cutting blade moves forward. Thus the operator can use a great deal of force in retracting the pillar. Besides, the pressure exerted against the pillar by the guard steadies the hand. Especially is this true of the left hand. I never trusted myself with a tonsil knife in the left hand until I used the one with guard and retractor attachment.

This tonsil knife, equipped with guard and retractor attachment, has been used only in a limited number of cases, as the first model was made only last month. The results, however, have been encouraging, and I am convinced that when I use the tonsil knife in the future it will be one equipped with guard and retractor attachment.

My excuse in offering it on such limited experience is that I thought the opportunity presented itself at a meeting where a symposiumon the faucial tonsils was to be one of the chief features. The instrument may be obtained from V. Müeller & Co., Chicago.

Newton-Claypool Building.

A CASE OF PHENOL-POISONING

MONTE STERN, M.D.
SOUTH ST. PAUL, MINN.

S. T., aged 32, Roumanian, was brought into my office in a condition of collapse, with pulse weak and thready, extremities cold, and consciousness almost lost. A cold sweat bathed his body. A hasty examination disclosed burns of the first degree extending from the wrists halfway up both forearms. Vigorous stimulation caused a good reaction from the shock, but within three minutes the patient became very much cyanosed, with labored and stertorous breathing. The respirations at this time went to 56 per minute. The pupils were dilated and reacted very sluggishly to light. The pulse remained strong and was of good volume and tension, but the cyanosis increased to an alarming degree. A slight convulsion manifested itself at this time. More vigorous stimulation was resorted to, with the result that after ten minutes of impending dissolution the patient began to improve. He was now hurried to the hospital, where he remained in a semiconscious condition for three hours, with respirations 26, pulse 80, and temperature 99. Convalescence from this point was uneventful. The urine was cloudy, acid in reaction, brown in color and had a specific gravity of 1.009. Albumin disappeared on the fourth day.

Investigation showed the burns to have been caused by pure phenol applied twenty minutes before the patient was seen. The patient told us that he had applied the phenol to cure a skin eruption and that he felt no pain until five minutes after its application, when the pain became unbearable.

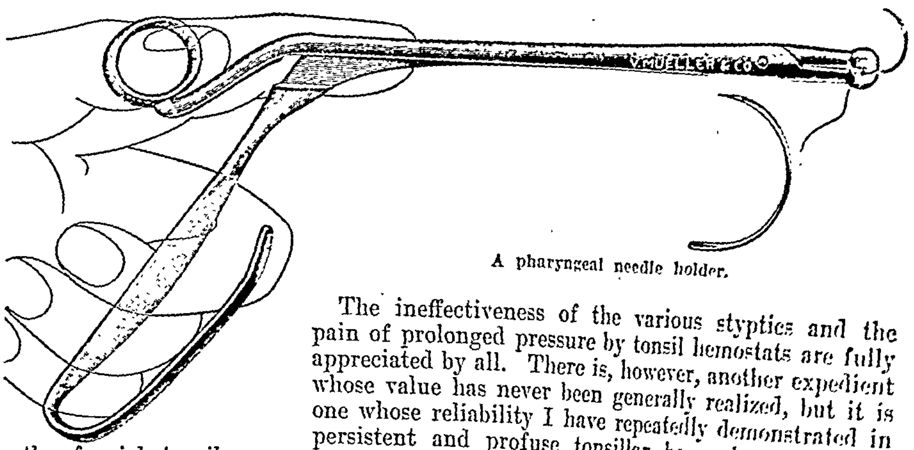
I believe that the primary shock was caused by the pain of the burn and that the condition following was due to the toxic action of the phenol absorbed through the skin.

A NEW PHARYNGEAL NEEDLE HOLDER

DESIGNED ESPECIALLY FOR SUTURING THE TONSILLAR WOUND AFTER TONSILLECTOMY

JOHN O. McREYNOLDS, M.S., M.D., LL.D.
DALLAS, TEXAS

With the substitution of complete tonsillectomy for the simpler but inadequate tonsillotomies of former years there must necessarily develop an increasing danger from postoperative hemorrhage. That the extirpation of the tonsil involves greater responsibility is generally recognized, and we are now concerned with the adoption of such methods as will minimize the risk from hemorrhage.



A pharyngeal needle holder.

The ineffectiveness of the various styptics and the pain of prolonged pressure by tonsil hemostats are fully appreciated by all. There is, however, another expedient whose value has never been generally realized, but it is one whose reliability I have repeatedly demonstrated in persistent and profuse tonsillar hemorrhage after all other methods had been faithfully employed without avail. This consists simply in suturing firmly the tonsillar wound to a sufficient extent to close up all denuded bleeding areas. This may require from one to three sutures, according to the nature of the case, and the stitches may include simply the two pillars of the fauces or they may include within their grasp the tissues at the base of the tonsillar excavation. The suture material which I have found best is a large size of black braided silk. The needles which have proved most satisfactory have been of the Hagedorn variety and of the size and curvature shown in the illustration.

But the factor of by far the greatest importance in the prompt and easy introduction of the sutures is the needle holder. After trying all of the usual forms of needle holders I was led to devise the one here illustrate

The handle must be so placed that the hand of operator is always out of the field of vision. Th strument should be able to hold the needle firmly out the use of a lock because it is essential to re needle quickly after it has penetrated the that with the same instrument the point of may be grasped immediately and pulled thr the gagging of the patient can dislodge the grasping surfaces of the instrument shou with notches or grooves so that the H with large eyes can be easily maintain position. The grasping surfaces at the present a concavity so that a curve curely held without incurring the which would at least be an embar midst of an operation on a thro

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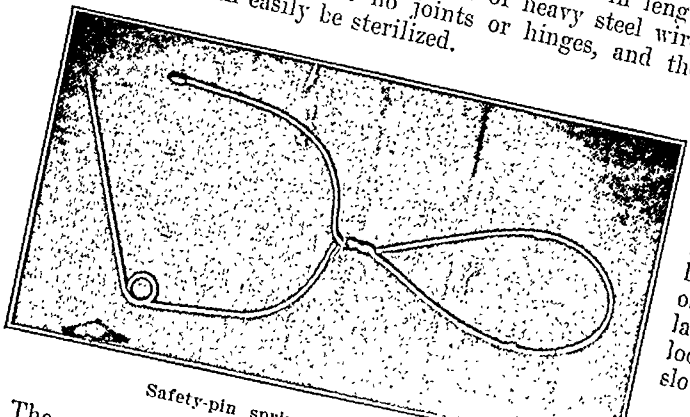

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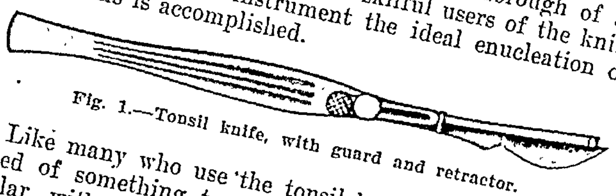

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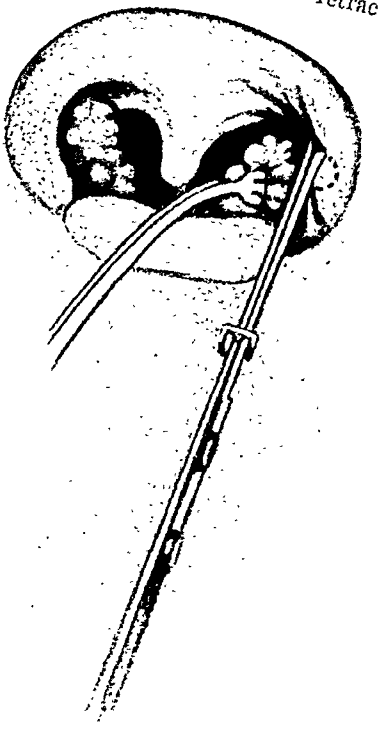

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MONTE STERN, M.D.
SOUTH ST. PAUL, MINN.

S. T., aged 32, Roumanian, was brought into my office in a condition of collapse, with pulse weak and thready, extremities cold, and consciousness almost lost. A cold sweat bathed his body. A hasty examination disclosed burns of the first degree extending from the wrists halfway up both forearms. Vigorous stimulation caused a good reaction from the shock, but within three minutes the patient became very much cyanosed, with labored and stertorous breathing. The respirations at this time went to 56 per minute. The pupils were dilated and reacted very sluggishly to light. The pulse remained strong and was of good volume and tension, but the cyanosis increased to an alarming degree. A slight convulsion manifested itself at this time. More vigorous stimulation was resorted to, with the result that after ten minutes of impending dissolution the patient began to improve. He was now hurried to the hospital, where he remained in a semiconscious condition for three hours, with respirations 26, pulse 80, and temperature 99. Convalescence from this point was uneventful. The urine was cloudy, acid in reaction, brown in color and had a specific gravity of 1.009. Albumin disappeared on the fourth day.

Investigation showed the burns to have been caused by pure phenol applied twenty minutes before the patient was seen. The patient told us that he had applied the phenol to cure a skin eruption and that he felt no pain until five minutes after its application, when the pain became unbearable.

I believe that the primary shock was caused by the pain of the burn and that the condition following was due to the toxic action of the phenol absorbed through the skin.

A NEW PHARYNGEAL NEEDLE HOLDER

DESIGNED ESPECIALLY FOR SUTURING THE TONSILLAR WOUND AFTER TONSILLECTOMY

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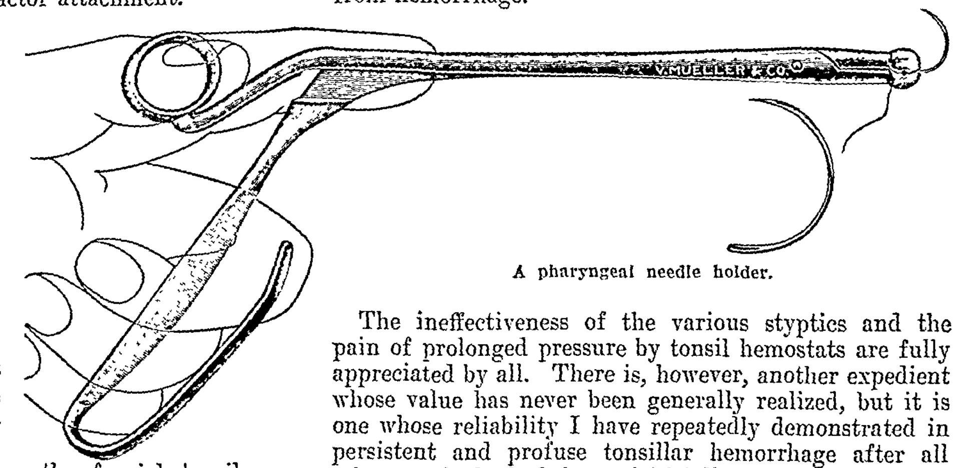
With the substitution of complete tonsillectomy for the simpler but inadequate tonsillotomies of former years there must necessarily develop an increasing danger from postoperative hemorrhage. That the extirpation of the tonsil involves greater responsibility is generally recognized, and we are now concerned with the adoption of such methods as will minimize the risk from hemorrhage.



A pharyngeal needle holder.

The ineffectiveness of the various styptics and the pain of prolonged pressure by tonsil hemostats are fully appreciated by all. There is, however, another expedient whose value has never been generally realized, but it is one whose reliability I have repeatedly demonstrated in persistent and profuse tonsillar hemorrhage after all other methods had been faithfully employed without avail. This consists simply in suturing firmly the tonsillar wound to a sufficient extent to close up all denuded bleeding areas. This may require from one to three sutures, according to the nature of the case, and the stitches may include simply the two pillars of the fauces or they may include within their grasp the tissues at the base of the tonsillar excavation. The suture material which I have found best is a large size of black braided silk. The needles which have proved most satisfactory have been of the Hagedorn variety and of the size and curvature shown in the illustration.

But the factor of by far the greatest importance in the prompt and easy introduction of the sutures is the needle holder. After trying all of the usual forms of needle holders I was led to devise the one here illustrated.

The handle must be so placed that the hand of the operator is always out of the field of vision. The instrument should be able to hold the needle firmly without the use of a lock because it is essential to release the needle quickly after it has penetrated the tissues so that with the same instrument the point of the needle may be grasped immediately and pulled through before the gagging of the patient can dislodge the needle. The grasping surfaces of the instrument should be provided with notches or grooves so that the Hagedorn needles with large eyes can be easily maintained in any desired position. The grasping surfaces at the distal end should present a concavity so that a curved needle may be securely held without incurring the risk of being broken, which would at least be an embarrassing accident in the midst of an operation on a throat filled with blood.

Therapeutics

CONSTIPATION

This condition is so frequently present in American people, and is so generally neglected or treated simply with laxatives and purgatives, often to the future detriment of the patient that, though often considered, we cannot too frequently discuss its proper management. Dietetic mistakes are so often the cause of constipation that a better understanding of the action of different foods on the alimentary canal is necessary properly to treat or manage constipation. As constipation is not always due to imperfect peristalsis, but often is due to impaired intestinal secretion, and as the various kinds of foods stimulate more or less the intestinal secretions, Lafayette B. Mendel, of New Haven, professor of physiologic chemistry at Yale, in a paper read at the last meeting of the American Therapeutic Society (*American Journal of the Medical Sciences,* October, 1909), well says that "the skilled therapist of to-day can well afford to devote to the specific action of the diet the same detailed consideration which he accords to his armamentarium of drugs."

In the stomach, acid is but a slight stimulant to its secretions, but, in the duodenum, acid stimulates, probably reflexly, secretion from the pancreas. By the proper performance of the duodenal digestion a substance is produced called secretin, which stimulates the glands of the intestines to activity. The best promoters of gastric secretion are "dextrins, maltose, dextrose, proteoses, and extract of meat." Mendel says that these stimulants are active at the pyloric end of the stomach, and a hormone, gastrin, is liberated which stimulates the whole secretory function of the stomach.

Nervous influences on gastrointestinal secretion are, of course, well understood. Perfect digestion cannot take place if the patient is suffering great worry or enduring mental frets, or when there is an unpleasant environment, or if non-appetizing food is presented to a patient suffering from intestinal indigestion and constipation. Therefore, a handicap of such surrounding conditions, or associated conditions, must be recognized, and they must be removed if possible.

The mental condition being improved and the food being well prepared and tastefully presented, Mendel's practical dietary facts should be remembered, as the better the digestion the less the constipation. He says that bouillon or meat soup taken early in the meal reaches the pylorus and duodenum and incites a flow of gastric juice. The dextrins and maltose of toasted bread and zwieback act similarly. The increased stomach secretion thus brought about acts as a stimulant to the pancreas and the liver, and plenty of pancreatic juice and bile is the result. Fats and especially oils inhibit the gastric secretion, and this dietary knowledge should be utilized when it has been decided that there is a hyperacidity or an abnormal amount of hydrochloric acid in the stomach; but when there is insufficient gastric secretion, fats and oils should be forbidden.

Varying amounts of acidity in the gastric contents either promote or inhibit the proper opening of the pylorus and the proper discharge of the stomach contents into the duodenum. Mendel says that foods which tend (like proteins) to combine with acid and diminish the free hydrochloric, or (like fats) to repress acid secretion, will delay the discharge from the stomach. When normal acid contents accumulate at the pylorus and are normally discharged into the duodenum, the reflex causes sufficient outpouring of bile to neutralize or render the contents of the duodenum alkaline, and besides this normal aid to intestinal digestion the bile is a stimulant to peristalsis, and intestinal activity is improved. An insufficient acidity of the stomach tends to promote fermentation and may allow intestinal putrefaction to occur. It is also possible, under lessened acid secretion of the stomach, that food may be regurgitated from the duodenum into the stomach. Hence the stomach secretion, especially the hydrochloric acid, being subnormal, fats and oils should certainly be prohibited as tending to make the condition worse.

While it is recognized that intestinal flora may be changed by the administration of certain drugs and possibly by lactic-acid ferments, it is well recognized that radical changes in diet will also change these intestinal conditions, and not only adults but especially infants may have such maldigestions, without objective symptoms, such as diarrhea, as to cause chemical mistakes sufficient to rob the body of necessary elements for its growth. Mendel says an improper amount of fat in the intestines in infants, or fat that is improperly absorbed, may allow the fatty acids to form soaps of calcium and thus rob the child of its necessary lime, which then passes off in the stools. The normal amount of lime, then, not being absorbed into the blood may allow an acidosis, with all its serious symptoms.

This indicates that in all cases of malnutrition, before medication is relied on, the kind of food taken and the character of the digestion, and a more or less thorough analysis of the stools should be made.

Other practical suggestions on the action of food in the stomach are offered by Carl A. Hedblom and Walter B. Cannon, professor of physiology in Harvard Medical School, Boston (*American Journal of Medical Sciences,* October, 1909). These investigators have determined that if carbohydrate food is thinned by adding ordinary amounts of water the rate of the exit of the food from the stomach is not changed, while adding an ordinary amount of water to protein food in the stomach makes the discharge into the intestines more rapid. Hard particles of food retard the evacuation of the stomach into the intestines, while coarse, branny foods leave the stomach quicker than similar foods of finer texture. An abnormal amount of gas in the stomach always delays the passage of food into the duodenum. Whether food is taken hot or cold does not seem to make any material difference in the rapidity with which the stomach contents are discharged into the duodenum, but food with normal acidity in the stomach is passed on much quicker than when the contents of the stomach are hyperacid.

These investigators have also shown that irritation of the colon with croton oil notably retards gastric discharge and delays the movements of food through the small intestine. This experimental fact should be constantly clinically recognized, viz.: that any reflex irritation, from chronic appendicitis, chronic abdominal pain, neuralgic or inflammatory, will inhibit the gastrointestinal digestion, and until the cause of such irritation is removed the digestion will be imperfect and constipation persistent.

Dr. L. M. Gompertz, of New Haven, presented a paper to the American Therapeutic Society at its last annual meeting (*American Journal of Medical Sciences,* October, 1909) in which he discusses the cause of constipation and his treatment without drugs. The length of time from the ingestion of food to the expulsion of the residue of that food from the rectum, Gompertz finds, in thirty individuals, to average from twelve to fifteen hours. In other words, the habit of normal man to have a movement of the bowels in the morning seems physiologically correct to expel the residue of the food of the day before. Certainly, any delay beyond this twenty-four hours would seem non-physiologic and to be a condition that must be actively treated.

Gompertz recognizes two forms of constipation, the atonic and the spastic. The fragmentary, or expulsion of small pieces of feces, he believes to be a part of the spastic form of constipation. The atonic type of constipation he believes is due to an atony of the muscles of the large intestine, and this is usually induced by the over-use of purgatives. He also recognizes that the primary cause of constipation may be an over-absorption of the fluid portions of the contents of the intestines, which would deprive the intestines of residue of sufficient bulk for the musculature to actively contract on it. In the atonic form of constipation the stool is hard and dry, and its caliber may be very large. There is no pain or much increased flatulence, although after such a condition has been in evidence for years, and especially when strong cathartics have been taken, a catarrhal condition of the intestines may develop, there may be fecal impactions, and scybalous deposits may cause local inflammations.

The other cause of constipation is due to a hypertonicity of the musculature of the intestines, which causes spastic constipation. In this form there is usually flatulence and a catarrhal condition of the intestine; spasm of the transverse colon occurs, causing retention of firm masses of feces with resulting fermentation. Colic and pain become frequent symptoms, and in severe cases large amounts of mucus may be passed. In spastic constipation the rectum usually remains empty, except during actual defecation, while in the atonic variety the rectum is more or less persistently filled. In this spastic form of constipation the size of the movements is very small, and they may be even ribbon-shaped.

The systemic disorders that may occur from a constipated habit may be acute, but are likely to be insidious; in fact, it is astonishing how harmless constipation apparently seems to be to some individuals. On the other hand, it is a demonstrated fact that chronic liver inflammation, chronic kidney inflammation, perhaps arterial disease, and certainly mental sluggishness, are conditions that can be, and are, caused by constipation and its consequences. The mental apathy, muscular debility, general malaise, and bad feelings which are so often attributed to malaria or biliousness are frequently entirely due to absorption of toxins from the intestines caused by constipation.

Imperfect stomach digestion due to dietetic errors is perhaps the most frequent cause of constipation, and here a correction of the food is of vital importance and vastly better treatment than the resort to purgatives or even laxatives. Hyperacidity of the stomach Gompertz finds a frequent cause of constipation, and high nervous tension and the eating of too large amounts of meat are probably frequent causes of this hyperacidity. The necessity for physical exercise in those who lead too sedentary a life is, of course, recognized, but such exercise is not frequently enough ordered.

It is probably frequent that not sufficient water is taken by the patient, and, on the other hand, that the fluid contents of the intestines are too rapidly absorbed. In either case, the advantage of weight and gravity is lost and the advantage of bulk for the intestines to act on is lost, the dryness and stickiness of the fecal matters is increased and the ability to expel them is diminished. To overcome such a condition Professor Lafayette B. Mendel advises the ingestion of a substance that will hold water in its meshes, and such a substance is agar-agar. The theory suggests, and the fact demonstrates, that when agar-agar is ingested and becomes mixed with fecal matters in the lower intestine, that it, retaining water, makes the fecal masses more bulky, more watery, more pultaceous, and hence of a consistency that is easily propelled and expelled. Agar-agar also fortunately resists bacterial decomposition.

Gompertz experimented with agar-agar as an addition to the diet of thirty patients who were suffering from constipation, the age of these patients varying from 15 to 83 years, and the majority of them being unable to have a movement of the bowels without the aid of drugs. The agar-agar was taken in the morning and evening, beginning with 15-gram (half-ounce) doses, and in most instances was eaten with milk or cream, the same as a breakfast food. In all but two of these thirty patients regular movements of the bowels began after the agar-agar had been taken from one to three days. After regular movements of the bowels had been established, the agar-agar was in most instances gradually reduced in amount. The duration of the treatment was from one to three months.

The agar-agar should be prepared in granular form, i. e., ground up fine, and can be eaten as a powder with cream or milk, as suggested, with the addition of sugar or salt to suit the taste. Such agar-agar was prepared by a local druggist.

Certainly any recommendation, either from a regulation of the diet or a change in the habits of the patient, or the addition of some simple article to the diet as suggested, that cures constipation, should be looked on as a distinct advance in treatment of this obstinate condition.

As another dietary suggestion in the treatment of constipation, Dr. Anthony Bassler, of New York (*Dietetic and Hygienic Gazette,* September, 1908), recommends the following laxative food for children who are afflicted with constipation:

BRAN GEMS

2 cups of bran.
2 cups flour.
1 cup milk.
¼ cup molasses.
½ teaspoonful baking soda (dissolved in hot water).
½ teaspoonful butter.
½ teaspoonful lard.
Salted to the taste.
Bake in a slow oven for forty-five minutes.

Bassler suggests that little children eat several of these gems after coming home from school in the afternoon, as he finds that they have a pleasant laxative effect.

A method of treating constipation other than by drugs has lately received considerable approval, viz., oil injections into the rectum. A soft rubber catheter may be inserted three or four inches up into the sigmoid flexure, the patient lying on his left side, and then from 100 to 150 c.c. (3 to 5 ounces) of warm sweet oil is injected by means of a fountain syringe. This oil should be retained, if possible, over night, and if the movement of the bowels in the morning is not satisfactory a small saline enema may be administered. This oil injection should be repeated daily for a week, then every other day for two weeks, and then once or twice a week for some period of time. The treatment in instances of dry feces and sluggish activity of the rectum is many times successful, and this treatment is again far in advance of the continued administration of cathartics and laxatives.

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SATURDAY, NOVEMBER 27, 1909

THE PATHOLOGIC ANATOMY OF CHRONIC ALCOHOLISM

In stating the causes of almost all the chronic, non-infectious diseases, it is a time-honored custom of the texts to include alcohol; and generally it is given a prominent place along with syphilis, followed at a respectful distance by gout and lead. Consequently the student comes to consider that not only is cirrhosis of the liver a usual result of alcoholism, but that nephritis, myocarditis, arteriosclerosis, and sundry disorders of the central nervous system also are commonly caused by it. The pathologist whose experience lies with the outcasts of great cities, however, knows well that the most alcoholic of his subjects are often free from nearly all, if not all, of these indurative processes, just as he observes that old prostitutes may show no evidences of inflammatory disturbances in the pelvis. On account of the common misconception of the anatomic changes produced by chronic alcoholism, it is worth while to consider just what conditions are and what are not found in the bodies of habitual drunkards.

In the city of Hamburg, as in other large and active seaports, there die annually many wanderers and outcasts brought low by drunkenness. At the last meeting of the German Pathologic Society there was reported by Fahr a series of three hundred and nine autopsies performed at the *Hafenkrankenhaus* (harbor hospital) of Hamburg on victims of chronic alcoholism, dying from either alcoholism alone or from other causes, no less than ninety-eight being suicides. In nearly all the cases the alcohol had been taken in the form of spirits, not as beer or wine. The results of these autopsies are distinctly not in harmony with the conception that alcohol is a poison which produces wide-spread and gross anatomic changes throughout the body, or that it is a common cause of either arteriosclerosis or nephritis. Even cirrhosis of the liver is far less common in alcoholics than it is usually supposed to be, for, of the three hundred and nine cases, in but eleven was cirrhosis the cause of death; in two other bodies there was an advanced cirrhosis, but death was due to some other cause. Of one hundred cases of cirrhosis in which autopsies were performed by Simmonds in Hamburg, alcoholism could be excluded in fourteen; in sixty it was evident, and in twenty-six there was no reliable information as to alcohol; therefore it must be concluded that, while only a very small proportion of drunkards suffer from cirrhosis (about 4 per cent.), there are not a few cases of advanced cirrhosis which are not due to alcoholism, although alcohol is responsible for far more than a majority of all cases of cirrhosis. On the other hand, in nearly every case of habitual drunkenness the liver shows fatty changes, usually severe, but not ordinarily associated with connective tissue increase; and this is by far the most frequent change in alcoholism. Next to the fatty liver in frequency, and probably much more important in its effects, comes chronic leptomeningitis, which was present in about half the cases. Fatty infiltration of the heart wall was present in 30 per cent., and chronic gastritis in 20 per cent. On the other hand, chronic nephritis caused the death of but eight of the three hundred and nine drunkards, and nephritis was found much less frequently among the alcoholic subjects in the harbor hospital of Hamburg than in the hospitals which receive patients of better habits. So, too, arteriosclerotic changes were certainly no more, and apparently somewhat less common and extensive among the bodies of alcoholics than among those of non-alcoholics of corresponding age. It would, therefore, seem unjustifiable to consider that alcohol, even when used in great excess, is of itself a common cause of either nephritis or arteriosclerosis.

It is a striking fact, and one familiar to pathologists, that a large proportion of deaths in chronic alcoholism occur without any anatomic alteration being found which is adequate to account for the death; this was the case in seventy-one of the three hundred and nine autopsies studied by Fahr. In such cases the fatty liver is almost invariably present, frequently chronic leptomeningitis, chronic gastritis, and fatty infiltration of the heart; but nothing to explain the sudden deaths, unless some are caused by failure of the fatty heart. Fahr suspects that changes in the ganglion cells of the heart may be responsible for the sudden heart failure, but as yet no anatomic proof has been forthcoming to support this hypothesis. It is interesting to note that protracted feeding of alcohol to guinea-pigs and rabbits failed to cause the fatty liver and other anatomic changes that are common in man, but the animals showed the same tendency to die suddenly and unexpectedly.

GOVERNMENT COOPERATION FOR IMPROVING THE PHARMACOPEIA

Few, if any, public health measures are of more direct importance than efficient regulation of the purity and identity of widely recognized medicaments and reasonable regulation of their use or, at least, restriction of their abuse. To secure a fuller appreciation of the uses and limitations of drugs is to benefit the public at large as well as to advance the development of the science of medicine.

It is gratifying, therefore, that the United States Public Health and Marine-Hospital Service has recognized the importance of drugs and drug standards in public health work and is now cooperating in a practical way with the Committee on Revision of the Pharmacopeia to improve our standards for drugs and to promulgate a knowledge of the true values or shortcomings of official medicaments. Our readers will, no doubt, be interested in the series of bulletins constituting a "Digest of Comments on the Pharmacopeia of the United States of America," which, by request of the Board of Trustees of the United States Pharmacopeial Convention, is now being compiled and published under the direction of the Surgeon-General of the United States Public Health and Marine-Hospital Service. The first of these bulletins[1] contains considerable material bearing directly on the shortcomings and needs of the Pharmacopeia. It indicates very well the degree of faithfulness with which the present Committee on Revision of the United States Pharmacopeia has adhered to the general principles or instructions of the Pharmacopeial Convention. It also shows the compliance, or rather lack of compliance, with the protocol of the Brussels Conference for the unification of formulas for potent medicaments, and thus further emphasizes the need that medical practitioners should interest themselves in a practical way in the making of the Pharmacopeia which they are to follow, if for no other reason than to keep fully abreast of the advances in medical science abroad.

Apart from the criticisms on the scope and the contents of the United States Pharmacopeia, and in addition to the material of a purely chemical or pharmaceutical nature, this bulletin contains much that will interest physicians generally. Thus, the references to the present-day use of the several drugs will be found a fair indication of the usefulness of certain medicaments, while the references from homeopathic and eclectic medical journals indicate some of the fallacies of sectarianism in medicine. They also appear to bear out the oft-repeated assertion that in the application of really useful medicaments there is no essential difference between the graduates of the several schools.

The present work is essentially a continuation of the "Digest of Criticisms" on previous revisions of the United States Pharmacopeia formerly published by the Committee on Revision through its Chairman, the late Dr. Charles Rice, and largely compiled by the late Hans M. Wilder. This was of inestimable value in connection with former revisions of the Pharmacopeia. The present series of "Digest of Comments" will, no doubt, be equally useful to the Committee on Revision to be elected at the forthcoming Pharmacopeial Revision Convention. Physicians generally, and delegates to the Pharmacopeial Revision Convention particularly, who wish to familiarize themselves with the needs of the Pharmacopeia of the United States will find much in this bulletin that will interest them and suggest profitable lines of activity.

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[1] Digest of Comments on the Pharmacopeia of the United States of America (Eighth Decennial Revision), for the Period Ending Dec. 31, 1905. Bull. 49, Hyg. Lab., U. S. P. H. and M.-H. S., Washington, pp. 295.

THE PERSONAL EQUATION IN MEDICINE

The theory of medicine, as of all other sciences, has often been affected by the personal equation—that constant error to which each individual is subject to a greater or less degree. Each observer, though he may be able to see facts clearly and even to trace the relation of cause and effect among them to some extent, is liable to error in the interpretation of those facts in proportion to the degree of his fixed personal bias, whether that personal bias be in favor of a widespread belief or merely of a little private theory of his own.

That acute observer of human nature, Rudyard Kipling, in a recent story,[1] creates a significant and not essentially improbable illustration of the workings of the personal equation in medical theory.

A practitioner of medicine who is likewise a devout believer in astrology (so runs Kipling's tale), in the days of the Great Rebellion in England, comes into a little village which is being devastated by the plague. He exhausts all the resources of the medical art of his time in vain; the people continue to despair and die. The physician, therefore, resolves to take counsel of the stars, through which he learns that the patroness of the pestilence is our Lady of Ill Aspect, the moon; and that the only hope for the dying people lies in the aid of the sun and the planet Mars. By chance the astrologer-physician sees some rats staggering and dying in the moonlight; and the idea of a connection between the rats and the plague flashes across his mind—not, indeed, that he for a moment entertains the idea that the rats carry contagion, but that, being creatures of the night and, therefore, of the moon, the rats must be parties to the sidereal conspiracy of which the plague is the outcome. So the doctor brings his patients away from the dark holes and hovels where they have been languishing, and takes them into the sunshine and fresh air—not because fresh air and sunshine are good in themselves, but because the influence of the sun, being opposed to that of the moon, is the proper one to seek. He organizes a war of destruction against the rats; and in the process of extermination all the dark, filthy places in the village are made light and clean—not, of course, because such a procedure is hygienic, but because it invites the favor of the sun and lessens the unfavorable influence of the moon. He causes the holes of the rats to be filled with slag from the village smithy—because the horse is a martial animal, and Mars is a favorable planet. The people are aroused from their apathy and terrified inertia by the tasks set them and the renewed hope held out to them; the village is cleansed and made hygienic; the rats are destroyed and the plague vanquished. The physician, regarded with adoration by the grateful people of the village, with becoming humility ascribes all merit to the favorable stars.

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[1] A Doctor of Medicine, Delineator, October, 1909.

Now, we may smile at the fanciful idea that the modern expedients of killing rats and rendering dwellings sanitary to rid a community of plague, if successfully practiced in the seventeenth century, might have strengthened the belief of physicians and laymen in astrology. There is food for a few moments' sober reflection, however, in this imaginative glimpse into the past.

Prejudice and prepossession did not die with the belief in astrology, nor are they the exclusive possessions of the ignorant in our own time. Science may warn against the error involved in the personal equation, but cannot destroy it, even where scientists are concerned. The danger is ever to be guarded against that some unsuspected factor—some idea which has taken possession of the mind unquestioned and whose sway has been taken for granted, like the belief in astrology in the mind of Kipling's physician—may prevent us from attaining some truth that waits near at hand to be discovered, like the age-long relation between infectious diseases and the filth in which they are bred and the noxious creatures by which they are conveyed.

WORTHLESS DRUGS

An important part of the work of the Council on Pharmacy and Chemistry is the investigation of non-proprietary drugs with the object of determining whether they are of sufficient value to be included in New and Nonofficial Remedies. These non-proprietary remedies are of two kinds: those recently introduced and those which, while in no sense new, are not to be found in the Pharmacopeia because they were considered as of little or no value. Drugs of the latter class are periodically resurrected and, by enthusiastic reports, made to all intents and purposes, "new" remedies. As Sollmann has said,[1] "The physician who is impressed by these reports naturally desires some unbiased and reliable information about them, as well as about the remedies which are actually new. The ordinary reference books, however, give but very scanty data; they necessarily lack the elasticity which is essential for the proper presentation of a new subject. Above all, a physician who desires to try these new remedies should be assured that they are of a uniform quality; but with them there are no established standards of any kind."

In the case of proprietary articles the Council has not required, as a condition of admissibility to New and Nonofficial Remedies, that their therapeutic value shall be demonstrated, but only that no grossly exaggerated therapeutic claim be made for them. Non-proprietary substances, on the other hand, have been admitted only when they appeared to possess positive medicinal value. This policy has resulted in the rejection of a considerable number of drugs, mainly from indigenous American plants, which have been used to some extent, but for which no definite therapeutic value has been shown. Since many of these drugs are made the essential ingredient of proprietary mixtures for which grossly extravagant claims are made, the Council has prepared several short articles to show on what basis the claims for the value of these non-proprietary drugs rest. In most cases it appears that such claims are based on reports of clinical experience and observations by untrained and little-known men. In these articles the Council has frequently found it necessary to refer to reports of little or no scientific value; in fact, these references, together with the lack of any available data from prominent medical authors, indicate the paucity of real evidence in regard to these drugs. Even the so-called clinical evidence is in many cases shown to be, not the honest expression of enthusiastic though incompetent observers, but rather of the nature of "patent medicine" testimonials or paid write-ups.

In the Pharmacology Department, in this issue, appears the first article of this series. It deals with echinacea, a drug which is the chief constituent of a number of nostrums for which ridiculous claims are made, and the article shows in a striking manner on what feeble evidence the asserted virtues of the nostrums containing this drug are based. In subsequent issues reports will appear on other non-proprietary drugs of doubtful value which form the prominent constituents of innumerable nostrums.

THE ATTEMPT TO DEGRADE THE SANITARY SERVICE AT THE ISTHMUS

Any doubt that an attempt is being made to degrade the Sanitary Department at the Isthmus is removed by the letter of Mr. Mann to the Bureau of Legislation, printed in the Department of Correspondence in this issue, and by a study of the bill now pending in Congress, to which that letter relates. The bill in question (H. R. No. 5155; S. 601), now in committee at both ends of the Capitol, was introduced almost simultaneously, in the House, by Mr. Mann, of Illinois, and, in the Senate, by Mr. Crawford, of South Dakota. Its printed title is "A Bill to provide for the government of the Canal Zone, the construction of the Panama Canal and for other purposes"; but it ought to read: "A Bill to provide for the appointment of one director, one chief engineer and one governor and to subordinate the chief sanitary officer to any one or all of these officers." That, at least, is the meaning of the bill when divested of all ambiguity, a meaning that becomes obvious when, in Section 3, Paragraph 3, it is proposed to dispose of the whole situation at the Isthmus by appointing the three officers first mentioned as the heads of coordinate departments, with no more mention of the Sanitary Department than if it did not exist. If this department is not specifically included in the list of designated departments it is excluded; and if it exists and is excluded, it must become subordinate to something that is included. This is a very old legislative ruse and one that is obviously brought into requisition at this time for the same old purpose of putting the country to sleep while a measure to which the people would naturally object is quietly rushed through Congress.

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[1] Sollmann, Torald: The Broader Aims of the Council on Pharmacy and Chemistry, The Journal A. M. A., July 18, 1908, li, 237.

That the people in general will object to this measure when they realize what it means is a safe assumption. That the medical profession in particular will firmly but insistently oppose it, now that its hidden design has been made apparent, is a certainty. And that the antagonism in both instances will be based on the soundest reasons becomes apparent the moment certain salient facts in the history of the Isthmian project are taken into account. Thus, it will be recalled, when the Government took over the Panama enterprise, now something over six years ago, it was very generally recognized that the French had reduced the feasibility of moving the dirt to a demonstration. But it was recognized with even more unanimity that the one remaining barrier to success was the sanitary control of conditions that had defeated every former attempt by converting the Isthmus into a veritable Golgotha.

In this emergency every eye turned as by a common impulse to Colonel William C. Gorgas, Medical Corps, U. S. Army, who, by virtue of his sanitary triumph over Havana, stood as the one man for this herculean task. It was known, however, that he had been able to succeed in Cuba only because he had been given an absolutely free hand by his military commandant, General Leonard Wood, who, being a medical man as well as a soldier, had the special intelligence necessary to comprehend the situation. And it was furthermore recognized that Colonel Gorgas must have a similarly free hand in order to be equally successful in Panama. Physicians in every part of the country accordingly petitioned President Roosevelt to make him an actual member of the commission on a footing of equality with the other members. This request, however, was not complied with, and Colonel Gorgas, who was to solve the problem on which the success of the whole enterprise depended, was designated as "Chief Sanitary Officer," with a status "subordinated in the seventh degree below the actual head of executive authority."

The result of this action was brought to the attention of the country by the report on Isthmian Canal Sanitation by Dr. Charles A. L. Reed.[1] It was there shown that the Sanitary Department, in consequence of that action, was hampered in everything that it undertook; that it was subjected to the most annoying infringements on what from the start ought to have been recognized as its exclusive prerogatives; that red tape impaired its efficiency; that presumptious interference by ill-informed superiors hampered its progress; and that its moral and educational force on the Isthmus was lessened by its position as an underlying service. The furor excited by this revelation was followed by the reorganization of the commission. Colonel Gorgas was made a member of that body as he ought to have been at the start. He was given authority to report direct to the chairman of the commission, just as other heads of departments were authorized to report. This somewhat tardy change made the Sanitary Department a coordinate instead of a subordinate branch of the Isthmian organization, and that is the satisfactory status which it occupies to-day.

While occupying this position and largely as a result of the freedom of action thus vouchsafed to it, the Sanitary Department of the Isthmian Canal Zone has achieved results that to-day not only command the applause of the civilized world, but that have resulted in the selection of Colonel Gorgas, the chief of that service, as the official head of the organized medical profession of America. Yellow fever, the perennial dread of the tropics, has been banished; malaria, the real pest of the Isthmus, has been reduced to a minimum; the bubonic plague had been challenged at the portals and denied a foothold; devastating endemics have been made things of the past; disease-breeding centers have been abolished; the cities of Panama and Colon—the control of which by the Sanitary Department, stipulated by treaty, is another reason why it should not be subordinated to any other department—these cities, once pestilential, have been made salubrious; while as a natural result of the fact that disease and death are no more common there than in many cities in the states, a sense of security has been imparted to the more than forty thousand persons to-day employed in the zone, and the success of the enterprise has thus been assured. And all of this has been and is being done in a land previously so dangerous to human life that it had become a byword and a reproach among the nations of the world. In the face of this matchless record, the proposition to degrade the service by which these results have been achieved—to place it back in the position of underling in which it was first placed—will come as a shock to the people.

The statement now made by Congressman Mann that "it is not possible to have good government on the zone with a lot of different heads" is, of course, thoroughly disingenuous. If there is to be only one head, then why does his bill designate three heads? And if three heads, why not four? And if not four heads, why not subordinate some department besides the one on which, without disparagement to others, is the very one on which the success of the whole enterprise depends? Then, too, has there not been good government in the zone with sanitation in the hands of a coordinate rather than a subordinate department? In short, has anything on the Isthmus come as near "making good" as the Sanitary Department? The people have so far voted hundreds of millions of dollars for the canal and they stand ready to vote as many more as may be necessary to complete it. But they insist and will insist not only that the money shall be judiciously expended, but that the whole enterprise shall be so safeguarded that, by the humane protection of life and health, there will be some prospect of its ultimate completion.

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[1] THE JOURNAL A. M. A., March 11, 1905.

It may be asserted, without fear of successful contradiction, that nothing has so contributed to public confidence in the ultimate success of the canal as the achievements of its Sanitary Department. The American people now demand that that department be left with freedom of action, that its efficiency be promoted rather than hampered, and, finally, that Congress treat it with the consideration befitting its demonstrated efficiency, its well-earned honor and its justified dignity.

MANSLAUGHTER AND HYPNOTISM

In some countries there are laws prohibiting public exhibitions of hypnotism. There should be such here. The traveling exhibitors who make their living by making fools of their fellow beings are not useful members of society. There is, in the first place, a peril in submitting oneself to another's will; and that is what the subject generally understands he is doing, though it is not by any means necessarily the fact. Another more immediate danger is shown by the recent occurrence in New Jersey—a possible direct danger to the life of the subjects. Especially is this true of such demonstrations as are reported to have been made in the case referred to, in which the operator stood on the rigid body of his subject, supported only by the head and feet. Such a performance is not suitable for a public exhibition, and we cannot think of any good reason why it should be for a private one. It may be true that it is often done without harm, but the autopsy findings in this case, as given through the press, strongly suggest that it was the cause of death. Public exhibitors of hypnotism may take the trouble to ascertain the physical fitness of their subjects, but we believe that this is rarely done, and many ugly possibilities show up on consideration of the subject. Leaving out of account the common belief which has sometimes manifested itself in our courts, that hypnotism may be responsible for involuntary crime, it is an abnormal condition and should not be too freely induced—certainly not without good reason.

Medical News

ILLINOIS

Personal.—Dr. Everett H. Butterfield, formerly director of the Ottawa Tent Colony, has been made medical director of the Buffalo Rock Sanatorium for the Treatment of Tuberculosis, Ottawa.——Dr. Henry E. Wagner, Chicago, has returned from Europe.——Dr. Adolphus P. Standard, assistant surgeon at St. Francis Hospital, Macomb, has resigned and will take charge of the new Graham Hospital at Canton.

State Supplies Free Antitoxin.—The State Board of Health announces that the refined and concentrated diphtheria antitoxin, which it supplies free of charge to all who need it in Chicago, is furnished by manufacturers operating under government license; that the antitoxin is of the highest quality and degree of purity, and in the opinion of the board, of higher potency than any serum in the market. In a recently-awarded contract, the unit of strength of antitoxin was as follows: 1,000 unit packages, 1,200 units per c.c.; 2,000 unit packages, 1,600 units per c.c.; 3,000 unit packages, 2,000 units per c.c.; and 5,000 unit packages, 2,500 units per c.c. The board expresses its belief that the appropriation of $8,000 per annum made for the free distribution of antitoxin in Chicago, will be sufficient to supply the needs of that city.

Chicago

To Aid Tuberculous Children.—The United Charities of Chicago, by the aid of a grant of $2,500 made November 15, from the Elizabeth McCormick Memorial Fund, will inaugurate an open-air school to be conducted in tents on the roof of the Mary Crane Nursery on Ewing street. At the outset, twenty-five children will be treated in the school.

Extensive Sanatorium Proposed.—At a meeting held in the Chicago Athletic Club, November 18, a plan was launched for the establishment of a large sanatorium near Las Vegas, N. M. It is proposed to purchase between 100,000 and 200,000 acres of land, comprising the old Valmore Ranch. When fully improved the institution will accommodate more than 1,000 patients. The sanatorium is to be exclusively for sufferers from tuberculosis who are not poor enough to accept state aid, but are unable to provide for the travel and care they need. An effort will be made to limit admissions to those patients, who in the best judgment of the examiners, give promise of a cure.

The Cost of Tuberculosis in Chicago.—The Department of Health, in the current issue of its *Bulletin*, gives the approximate cost of tuberculosis to the people of Chicago during 1908 as $23,635,190, distributed as follows: The money value of lives lost amounted to $19,571,950; the wages lost by the decedents amounted to $1,336,200; the cost of the illness of those who died, $707,040; the loss of wages of patients still living, $1,120,000, and the cost of illness of 10,000 living patients, $900,000. During the first nine months of the current year, 3,024 new cases of tuberculosis were reported to the department of health, equivalent to 136 per 100,000 of population. These new cases were distributed as follows: Business and factory wards, 482 per 100,000; poor residence wards, 188; fair residence wards, 158; good residence wards, 104; and semi-suburban wards, 87 per 100,000. This demonstrates that the cost of tuberculosis falls most heavily on the poorer people in the city.

KENTUCKY

Changes in Louisville Health Force.—The mayor has appointed Dr. William Ed. Grant health officer; Drs. Ezra O. Witherspoon and Griffin C. Kelly, assistant health officers; Dr. J. W. Fowler, superintendent of the City Hospital; Dr. Jesse I. Whittenberg, superintendent of the Eruptive Hospital; Drs. Heman Humphrey and Charles J. Rosenham, city physicians, and Dr. Fred L. Wilhoit, sanitary inspector.

Against Tuberculosis.—Articles of incorporation of the Kentucky Association for the Study and Prevention of Tuberculosis were filed with the clerk of Jefferson county, October 27. The object, as stated, is to encourage local associations for the study and prevention of tuberculosis. On the first board of directors are the names of Drs. Henry S. Keller, Louisville; R. W. Thompson, George P. Sprague, Lexington; Dunning S. Wilson, Louisville, and Jacob Glahn, Owensboro.——The Lexington Antituberculosis Association, at its annual meeting, November 14, elected the following officers: Dr. George P. Sprague, president; Dr. Nathan R. Simmons and R. C. Ware, vice-presidents; Thomas Johnson, treasurer; Mrs. Claude Garth, secretary, and Mrs. Judge Lafferty, Dr. Thomas C. Holloway and Dr. Orrin L. Smith, executive committee.

MARYLAND

County Society Meeting.—At the annual meeting of the Washington County Medical Society, held at Hagerstown, November 11, the following officers were elected: President, Dr. DeWitt C. R. Miller, Mason and Dixon, Pa.; vice-president, Dr. William A. Quinn, Chewsville; secretary, Dr. Samuel M. Wagaman, Hagerstown; treasurer, Dr. Hamilton K. Derr, Hagerstown, and censor, Dr. V. Milton Reichard, Fairplay.

Personal.—Dr. Charles A. Wells, recently elected state senator from Prince George county, was tendered a reception by his friends at Hyattsville, November 13.——Dr. James H. Jarrett, Towson, has recovered from his recent illness.——Dr. Harry V. Harbaugh, East New Market, suffered severe burns on the face October 14, by the explosion of an automobile lamp.——Dr. William H. Fisher, of the staff of the Springfield State Hospital for the Insane, has resigned, and Dr. E. P. Harrison has been appointed assistant physician.——Dr. Joseph W. Reynolds, Cecil county, is reported to be seriously ill with disease of the stomach.

Health Recommendations.—The Commission of Hygiene and General Health has recommended to the governor an increase in the appropriation for the State Board of Health to allow for the extension of its work. He recommends that the work of the board be divided into five bureaus; that provision be made for the proper supervision of the water supply and sewerage; the creating of the office of sanitary engineer; the employment of sufficient draftsmen and inspectors, and the appropriation of $1,000 a year for the publication of a popular health bulletin.

Baltimore

Personal.—Dr. Frederick Taylor returned from Europe November 15.——Dr. Harry L. Homer has been made assistant physician of the Union Protestant Infirmary.——Dr. Ira Remsen, president of Johns Hopkins University, has been elected trustee of the Carnegie Foundation, vice President Eliot of Harvard University, retired.

MASSACHUSETTS

Needs of Infirmary.—At a meeting of the directors of the New Bedford Antituberculosis Association, held November 1, it was reported that there were twenty-four patients in the sanatorium of the association, and that three vacancies existed. Up to the present time, the amount pledged for the new sanatorium amounts to $20,500, and $7,000 is still needed before the buildings can be completed.

Woman's Hospital Opened.—The Free Hospital for Women, Brookline, was opened for inspection November 4. The institution has recently been much enlarged and improved. It is devoted to the treatment of diseases peculiar to women and is an entirely free institution. It has a present capacity *of fifty-four beds which are occupied only by surgical* patients. The medical staff is under the direction of Dr. W. P. Graves.

Infectious Diseases.—During September there were reported to the State Board of Health 466 cases of diphtheria, 105 of measles, 382 of scarlet fever, 491 of typhoid fever, 585 of tuberculosis, 13 of cerebrospinal meningitis, 47 of whooping cough, 46 of varicella, 9 of ophthalmia neonatorum, 2 of tetanus and 1 each of erysipelas, mumps, smallpox and trichinosis.

Endows Bed.—By the will of the late James Ingram, Lawrence, $5,000 is devised for the maintenance of a bed in the Lawrence General Hospital, to be named after the testator.

MISSOURI

Personal.—Drs. Byron N. Stevens, Chillicothe, and John L. Burke, Laclede, have been appointed pension examining surgeons.——Dr. Malcolm M. Campbell, Albany, was thrown from his buggy in a runaway accident recently, fracturing two ribs.——Dr. Frank B. Fuson, Springfield, has been appointed a member of the State Board of Health, vice Dr. Frank J. Lutz, St. Louis, term expired.

Licenses Revoked.—The license of Dr. Charles W. Hume, Columbia, was revoked for fifteen years by the State Board of Health, at its meeting in Jefferson City, October 21, on the charge that he had written prescriptions for liquor. No defense was made.——Dr. Joseph T. Bazan, Glasgow, is said to have had his license revoked by the State Board of Health.

School Inspectors.—The Health Commission of Kansas City has selected the following inspectors of public school pupils and buildings: Drs. Hasbrouck DeLamater, Scott P. Child, Archie N. Johnson, Jesse E. Hunt, E. F. DeVilbis, Eugene P. Hamilton, William J. Thompkins and Otho L. McKillip.

Dinner for Dr. McAlester.—The physicians of Columbia and members of the faculty of the University of Missouri are planning a dinner in honor of Dr. Andrew W. McAlester, formerly dean of the school of medicine. At the dinner a book will be presented to Dr. McAlester, containing autographs of his former students.

St. Louis

Personal.—Dr. Kenneth W. Millican has been appointed, by the Municipal Commission on Tuberculosis of St. Louis, editor of its bulletin.——Drs. Arthur H. N. Juengel and Melton, internes in the City Hospital, are ill with diphtheria.

New Hospital Staff.—At the request of the Alexian Brothers' Hospital of St. Louis, the St. Louis University has named the following staff: Dr. Charles H. Neilson, physician and chief of staff; Dr. John W. Marchildon, genitourinary department; Dr. Major G. Seelig, surgeon; Dr. Carroll Smith, assistant surgeon; Dr. William W. Graves, neurologist; Dr. Albrecht Collasowitz, oculist; Dr. Otto L. Von der Au, laryngologist; Dr. Ralph L. Thompson, pathologist, and Dr. George C. Crandall, consulting physician.

NEW HAMPSHIRE

State Sanatorium.—The State Sanatorium for the Care and Treatment of Tuberculosis received its first patients September 14. The following official examiners have been selected up to date: Drs. Samuel R. Upham, Claremont, N. H., John D. Proctor, Keene, and Miah B. Sullivan, Dover. The rate of board is $10 per week. Any applicant who is unable to pay the board rate will be referred to the State Board of Charities and Corrections, which will fix the rate to be paid. When in full running order, the sanatorium will accommodate from thirty-five to forty patients. It is situated on the side of Mount Moosilauke, an elevation a little more than 1,600 feet. The buildings in the institution consist of a two and one-half story administration building containing dining room for patients, physician's office, laboratory, sitting room and quarters for the employees, and two detached ward buildings with wide piazzas, and rooms sufficient to accommodate all the beds. Dr. P. Charles Bartlett, Warren Summit, is the superintendent, and he will examine patients at the office of Dr. Wheat, Manchester, on the first and third Tuesdays of each month, between 11 a. m. and 1:15 p. m.

Personal.—Dr. Noel E. Guillet has been elected president of the Manchester Medical Society, vice Dr. Walter T. Crosby, resigned.

NEW YORK

Want Hospital Pensions.—The conference of medical superintendents and managers of state hospitals, together with the members of the State Lunacy Commission, have decided to favor legislation at the coming session of the legislature to provide for an increase of about 20 per cent. in the salaries of attendants and nurses in the state hospital service. A paper was presented recommending that annuities be paid not only to employees but also to members of the medical staffs of state hospitals if they retire after twenty-five years' service. This proposition was endorsed by the conference and a committee was appointed to confer with the lunacy commission in the drafting of necessary legislation.

Wishes to Maintain Sanatorium.—The Metropolitan Life Insurance Company has caused to be filed with the clerk of Albany county, a writ of certiorari in the matter of its application to the state superintendent of insurance for approval of plans to buy land on which to maintain a tuberculosis sanatorium, and in which the superintendent denied the application. In its papers, the insurance company asserts that the superintendent of insurance has power to pass on the application, holding that it is a proper purpose for a company to conserve its assets by cutting down its death rate.

Health Officers Effect Organization.—At the ninth annual conference of sanitary officers of the state, held in Rochester, November 11 and 12, organization was effected, and the following officers were elected: President, Dr. Robert Simpson, Jr., Volney; vice-presidents, Drs. Robert M. Andrews, Bergen, and David M. Totman, Syracuse; secretary, Dr. Montgomery E. Leary, Rochester; and treasurer, Dr. William Stanton, Webster. One officer from each county will report proposed laws and rules for adoption at the next conference.

Personal.—From the list of examiners of the State Board of Medical Examiners, which appeared in THE JOURNAL, November 13, page 1649, the name of Dr. Ralph H. Williams, examiner in physiology, was accidentally omitted.——Dr. Jason Parker has been made secretary of the board of health commissioners of Jamestown, and Dr. Morris N. Bemus has been appointed a member of the local board of health.

Emma Calvé Camp Opens.—The New York Throat, Nose and Lung Hospital has opened its tuberculosis annex and night camp immediately adjoining the present hospital building. The annex has fifty beds. The camp is named in remembrance of the singer who gave a concert at which a large sum was raised for the hospital. The camp is intended for men only, who go there after their days' work is done.

Medical Library Association Elects.—The Utica Medical Library Association, at its annual meeting, held November 8, elected Dr. Raymond L. Baker, president; Dr. Thomas C. Gifford, vice-president; Dr. Angeline Martine, secretary; Dr. Charles H. Baldwin, *treasurer; and Dr. Smith Baker, librarian.*

Appropriation for Tuberculosis Hospital.—The Board of Supervisors of Monroe county, on November 3, adopted a report calling for an additional appropriation of $75,000 for a site and buildings for a tuberculosis hospital to be established on the county farm in the town of Brighton.

New York City

New Home of the Health Department.—Mayor McClellan has laid the cornerstone of the new office building of the Department of Health, at Willoughby and Fleet streets and Flatbush avenue, Brooklyn. Dr. Thomas Darlington, health commissioner, and Dr. Joshua M. Van Cott, president of the Kings County Medical Society, were the speakers. The cost of the building will be about $350,000, and it is hoped that it will be ready for occupancy by January 1.

Personal.—Dr. Ernest Sachs has been appointed to the new surgical department for diseases of the nervous system just established at the Beth Israel Hospital.——Dr. Charles Hoffman has been elected professor of electrotherapeutics in the New York School of Clinical Medicine and the West Side German Dispensary.——Dr. John M. Wheeler has been appointed assistant surgeon in the ophthalmic department of the New York Eye and Ear Infirmary.

German Hospital Dinner.—The German Hospital Dispensary celebrated its fortieth anniversary by a dinner at which Professor Hallock of Columbia University and Dr. August Zinsser made addresses. Gifts of $5,000 each were announced from Mr. Max Richter and Mrs. Victor Bayer. On this occasion Dr. Zinsser received an honorary degree from the University of Giessen, Germany, and Dr. Otto G. T. Kiliani was presented with the order of the Crown in the third degree by Rudolf Franksen, German Consul General, who was the bearer of a letter from the Chancellor of the German Empire. Drs. Rudolf C. L. Denig and Louis Peiser each received the order of the Red Eagle in the fourth degree.

More Hospital Space Needed.—The annual report of the Charity Organization Society sets forth the most urgent need of more beds and hospitals for the victims of tuberculosis in order to meet the increased overcrowding which are found throughout Manhattan and the Bronx. The situation in Harlem and the Bronx is becoming a problem by itself. They also urge more playgrounds, industrial schools, day nurseries and diet kitchens. More than 70,000 visits were made to families and nearly $85,000 has been disbursed in material relief. The Special Employment Bureau has been endeavoring to solve the problems of occupations for cripples and for cases of arrested tuberculosis.

Harvey Society Lectures.—The fifth course of Harvey Society Lectures began October 30 with a lecture by Dr. Richard M. Pearce on "The Problems of Experimental Nephritis." Other lectures will be given Saturday at 8:30 in the Academy of Medicine, 17 West Forty-third street, as follows:

December 4.—Prof. Otto Cohnheim, University of Heidelberg, "The Influence of Sensory Impressions on Scientific Deductions."

December 11.—Prof. T. G. Brodie, University of Toronto, "Renal Activity."

December 18.—Prof. Carl G. Huber, University of Michigan, "Renal Structure."

Jan. 15, 1910.—Prof. Ludwig Hektoen, University of Chicago, "Certain Phases of the Formation of Antibodies."

February 19.—Dr. Eugene L. Opie, The Rockefeller Institute, "Inflammation."

March 5.—Prof. Adolf Meyer, Johns Hopkins University, "The Present Status of Aphasia and Its Relation to Psychopathology."

March 19.—Prof. A. Magnus-Levy, University of Berlin, "Pathology and Therapy in Diseases of Metabolism."

April.—Prof. Jules Bordet of the Pasteur Institute of Brussels. The exact date and title will be announced later.

NORTH DAKOTA

Personal.—Dr. Maude R. Williams has been elected secretary of the Health Reform Organization recently organized at Devils Lake.——Dr. Thomas M. MacLachlan, Bismarck, has resigned as physician to the Indian School.

Sanatorium Site Selected.—After several months' deliberation, the committee consisting of Drs. Gustave F. Ruediger, Grand Forks, James Grassick, Grand Forks, and Fannie Dunn Quain, Bismarck, appointed by the state legislature to select a site for a state sanatorium for tuberculosis, announces that it has selected a site 2½ miles north of Dunseith, on the south slope of Turtle Mountain. The state proposes to buy 160 acres if the town of Dunseith will furnish 80 acres additional.

District Society Organized.—As the result of the recent visit to Dickinson of Dr. J. N. McCormack, the Southwestern District Medical Society has been organized, with the following officers: President, Dr. Victor H. Stickney; vice-president, Dr. Homer A. Davis, and secretary, Dr. Joseph P. Weyrens, all of Dickinson.

OHIO

Defense Society Urged.—In order to protect the rights of the medical profession of the state from quacks, blackmailers, malpractice suits and other evils, the founding of a state defense organization was advocated at a meeting of the State Association of Secretaries of Medical Societies, held in Columbus recently.

Personal.—At the recent municipal election, Dr. Louis Schwab was elected mayor of Cincinnati, Dr. John M. Withrow, a member of the board of education at large, and Dr. Henry J. Cook, a member of the city council.——In a collision between automobiles at Cleveland, November 11, Dr. Willard C. Stoner was thrown from his auto and severely injured.

Hospital Staff Elected.—At a special meeting of the board of directors of the Cincinnati Hospital, the following staff was elected for the ensuing year:

Physicians East Medical Service: Drs. Edwin W. Mitchell and Frederick Forchheimer, seniors; Dr. Louis G. Heyn, junior.

Physicians West Medical Service: Drs. George A. Fackler and Oliver P. Holt, seniors; Dr. Allan Ramsey, junior.

Physicians South Medical Service: Drs. John E. Greiwe and Mark A. Brown, seniors; Dr. Henry L. Woodward, junior.

Neurologists: Drs. Herman H. Hoppe and Frank W. Langdon, seniors; Dr. Phillip Zenner, consultant, and Drs. Robert Ingram and David I. Wolfstein, juniors.

Surgeons: Drs. Joseph Ransohoff, Nathaniel P. Dandridge, Edward W. Walker, John C. Oliver, Horace J. Whitacre and Simon P. Kramer, seniors, and Drs. Casper F. Hegner, Arch I. Carson, Carl R. Hiller, Harry H. Hines and Frank E. Fee, juniors.

Orthopedic surgeons: Drs. Albert H. Freiberg and Charles E. Caldwell, seniors, and Dr. Robert Carothers, junior.

Dermatologists: Drs. Augustus A. Ravogli and Meyer L. Heidingsfeld, seniors, and Dr. Elmore B. Tauber, junior.

Oculists: Drs. Robert Sattler and Derrick T. Vail, seniors, and Dr. Victor Ray, junior.

Laryngologists and aurists: Drs. Samuel E. Allen and John W. Murphy, seniors.

Pediatrists: Drs. Allyn C. Poole and B. Knox Rachford, seniors, and Drs. Alfred Friedlander and Frederick W. Lamb, juniors.

Obstetricians: Drs. William D. Porter and George M. Allen, seniors, and Dr. Robert W. Thomas, junior.

Gynecologists: Drs. Charles A. L. Reed, Charles L. Bonifield, John M. Withrow and Sigmar Stark, seniors, and Dr. James W. Rowe, junior.

Pathologist: Dr. Paul G. Woolley.

Radiographer: Dr. Sidney Lang.

Cystoscopists: Drs. A. P. Cole and J. Louis Ransohoff.

Dentist: Dr. H. C. Matlack.

Laboratory and museum: Drs. W. E. Wherry, Frederick W. Lamb, Arthur E. Osmond, Charles S. Rockhill, Marion Whitacre, William H. Strictmann and A. P. Cole.

Anesthetist, with rank of junior, Dr. F. H. McMechan.

OREGON

Hospital for Wallowa.—At a mass meeting, November 4, in Wallowa, $3,000 of the $5,000 necessary to secure the building of a hospital in that city was subscribed. The institution will be in the charge of Dr. Verdo D. Gregory.

Free Dispensary to be Opened.—With the cooperation of the Oregon Medical College and Visiting Nurses' Association, the Peoples Institute has decided to open a free dispensary in rooms rented from the Men's Resort.

Personal.—Dr. Edwin E. Straw, mayor of Marshfield, was painfully injured in an automobile accident, October 10.——Dr. Jacob S. Giltner, Portland, sustained a third attack of paralysis, October 5.——Dr. Estelle J. Stinson, Portland, suffered a dislocation of the elbow, contusion of the shoulder and a severe cut on the face in a runaway accident recently.

PENNSYLVANIA

Ex-Residents' Association Election.—At the regular meeting of the Mount Sinai Hospital Ex-Residents' Association, held November 3, the following officers were elected for the term of one year: President, Dr. Maurice B. Cooperman; vice-president, Dr. Samuel Wexlar, and secretary and treasurer, Dr. Morris Ginsburg.

New Portrait for University Collection.—An addition has been made to the collection of oil portraits in the Medical Department of the University of Pennsylvania, a painting by Lazar Luditz of Dr. Hobart A. Hare, professor of children's diseases in the university in 1890-91. The collection of portraits of ex-professors in the medical department is complete with but ten exceptions and this number will shortly be reduced to seven, as the descendants of Dr. Adam Kuhn and Jacob Randolph have recently promised to present oil paintings of their ancestors, and Julian Story has almost completed the portrait of Dr. Samuel G. Dixon. Of the seven remaining ex-professors whose portraits are lacking, five are living, Drs. Billings, Starr, Flexner, Strawbridge and Kelly, while two are deceased, Drs. J. B. Rogers and John Carson.

State Hospitals Warned.—Heads of all the state hospitals for the insane were warned, November 15, by Auditor General Young that he would no longer honor bills for patients who were not actually being treated. It is said to have been the practice in many hospitals to allow patients to go out on parole and still to continue to carry the names on the records as being under the care and treatment of the institution.

Philadelphia

New Quarters for Pediatric Society.—The Philadelphia Pediatric Society announces that it has secured Thomson Hall in the new building of the College of Physicians, where all future meetings will be held.

New Home for Indigent.—On November 18, council's finance committee reported favorably an appropriation of $50,000 for the purchase of a site, containing forty-seven acres, known as the Holmesburg Driving Park. This is the first step toward building the new home for the city's poor. There is already available nearly $700,000 for the building. Before the plans are drawn Dr. Joseph S. Neff, director of health and charities, and the architect will consult with Homer Folk, president of the New York visiting committee of the New York State Aid Association.

Physicians Guests of Druggists.—The members of the Southwark Medical Society were the guests of the Southeastern Drug Association at a banquet, November 19. The speakers were Dr. Max Staller, president of the society, and Dr. Max Barbour. The latter spoke on "The Relation of the Physician to the Druggist."

GENERAL NEWS AND COMMENT

The "New" (?) Method of Spinal Anesthesia

Sensational reports of a remarkable new anesthetic and method of anesthesia have recently appeared in the newspapers. These reports, which would lead the reader to infer that this method had just been brought before the profession, refer to the method of spinal anesthesia with Jonnesco's modification, by which, through the addition of a small quantity of strychnin to the anesthetic (stovain) to overcome the toxic effects, he claims to be able to make the injection at any point of the spinal column, so as to secure complete general anesthesia.

Of course, spinal anesthesia has been in use for several years; and even the modification introduced by Jonnesco of Bucharest is not new, having been presented by him before the Second Congress of the International Society of Surgery, which met at Brussels in September, 1908. In conjunction with A. Jiano, Jonnesco also published his modification in the *Therapeutische Monatshefte*, May, 1909, and elsewhere. In the *Presse médicale*, Oct. 13, 1909, he published a full account of his methods and results. Briefly, his technic is as follows:

A quantity of stovain (tropocain or novocain), varying according to the patient and the height at which the puncture must be made, is placed in a sterilized rubber-stoppered tube. To this is added 1 c.c. of a solution containing from 0.5 to 1 mg. of strychnin sulphate in sterilized water. The puncture is made in one of two localities, between the first and second dorsal or between the twelfth dorsal and the first lumbar vertebræ, or both combined. For anesthesia of the head and neck, the patient lies with the head a little raised if the operation is to be made on the neck, or with the head horizontal if the operation is to be made on the face or skull. If the operation is on the arm, the patient remains sitting for two or three minutes and then lies with the head slightly raised. For operation on the abdominal viscera and the lower extremities, injection is made into the dorsal lumbar region and the patient is kept sitting for two or three minutes, after which he is allowed to lie with the shoulders raised.

Jonnesco claims to have had no fatalities and no mishaps during or after the anesthesia. In his view there are no contraindications and the anesthesia is always successful if the fluid has entered the subarachnoid space. Jonnesco asserts that the method is particularly advantageous for operations on the face and neck; also for laparotomies on account of the absolute immobility of the viscera and the freedom from coughing and vomiting. He says that in the hands of other surgeons his method has given favorable results, the total of cases in which this technic has been applied to July, 1909, amounting to 625. A tendency to nausea was noted in scarcely more than 2 per cent. of his cases; vomiting in 1.25 per cent.; sweating in 2 per cent.; slight headache, disappearing in a few hours, in 6.25 per cent., and retention of urine in 4.5 per cent., but only after operations in which this is usual under inhalation anesthesia. The pulse was generally normal, occasionally a little accelerated (80 or 90), but always strong, showing how the strychnin obviates the depressing action of the anesthetic. There was momentary arrest of respiration in five cases during Jonnesco's tentative experiments with atropin, scopolamin, etc., but none since he has been using the technic described. The anesthesia persists for from one and a half to two hours. Less than 0.1 gm. of stovain allows persistence of sensation of traction, but with this dose all sensation is abolished. Jonnesco adds that the strychnin and stovain must not be sterilized, as this impairs some of their properties.

At the meeting of the thirty-eighth congress of the German Society of Surgery at Berlin, April 14 to 17, Bier, in discussing spinal anesthesia, condemned the method of Jonnesco; and Rehn, at the same meeting, stated that if an anesthetic liquid is injected into the tissue of the medulla in animals, death occurs immediately, owing to a subacute intoxication by the medicament, for, Rehn says, death does not result if distilled water only be injected. This experiment, according to Rehn, shows the considerable danger of injections made above the lumbar region, as Jonnesco has recommended. Jonnesco's illustrated paper in the *Bull. de l'Acad. de Méd.*, Oct. 12, 1909, and in the *Presse médicale*, cited above, is in part a reply to these criticisms.

Southern Medical Association Meets.—The fourth annual convention of the Southern Medical Association was held in New Orleans, November 9-11, under the presidency of Dr. Giles C. Savage, Nashville. The annual oration was delivered by Dr. Isadore Dyer, New Orleans; the address in medicine by Dr. John A. Witherspoon, Nashville, Tenn.; the address in surgery by Dr. Francis G. DuBose, Selma, Ala., and the address in ophthalmology by Dr. Alexander W. Stirling, Atlanta, Ga. Dr. Witherspoon made a plea for the elimination of politics from medical boards, and urged the association to demand that the laws of the states included therein be so changed as to make it obligatory on the respective governors to select members of state boards of health from a list of competent physicians recommended by medical men. The following officers were elected: President, Dr. Walter W. Crawford, Hattiesburg, Miss.; vice-presidents, Drs. James F. McKinstry, Gainesville, Fla.; Waller S. Leathers, University, Miss.; Jacob R. Snyder, Birmingham, Ala.; H. L. Harris, Georgia; George Dock, New Orleans, and Frank A. Jones, Memphis, Tenn., and secretary-treasurer, Dr. Oscar Dowling, Shreveport, La. (reelected). Nashville was selected as next place of meeting. A resolution was introduced by Dr. Frederick J. Mayer, Scott, La., urging the clergy to unite with physicians in improving the sanitary conditions of the South, and that steps be taken to systematically collect vital statistics. Dr. E. Denegre Martin, New Orleans, introduced a resolution endorsing the movement for a national board of health. A resolution was adopted thanking John D. Rockefeller for his contribution of $1,000,000 to fight the hookworm disease. The medical section elected Dr. George Dock, New Orleans, chairman, and Dr. H. Eugene Mitchell, Birmingham, Ala., secretary. Dr. Urban S. Bird, Tampa, Fla., was elected chairman of the section on ophthalmology, and Dr. Edward C. Ellett, Memphis, Tenn., secretary. The surgical section elected Dr. E. Denegre Martin, New Orleans, chairman, and Dr. Jere L. Crook, Jackson, Tenn., secretary.

Plans and Suggestions for the Housing of Tuberculous Patients.—The National Association for the Study and Prevention of Tuberculosis, 105 East Twenty-second street, New York, has issued a pamphlet entitled "Some Suggestions and Plans for Housing Consumptives," containing views, floor plans and estimated cost of construction of cottages and sanatoriums of various types. The subjects considered are: the grouping of sanatorium buildings; administration buildings; the plan of combining administration buildings and patients' quarters under one roof (not recommended, except where economy in the remodeling of old buildings is the first consideration); the lean-to type of patients' quarters (recommended for cheapness of construction and as serviceable and comfortable when roughly finished for patients with incipient tuberculosis, and when well finished for patients with advanced tuberculosis); infirmaries and buildings for patients with advanced tuberculosis; the cottage type of building for one, two or more patients; remodeled farmhouses; day camps; and sleeping-porches for home treatment. The pamphlet embodies the preliminary report of the studies of Dr. Thomas Spees Carrington, who has by correspondence and personal investigation covered the entire field of the United States. The association has at its offices much more detailed data, architects' plans, drawings, etc., and invites correspondence with any one interested in the subject of sanatorium and hospital construction.

Sioux Valley Physicians to Meet.—The semi-annual meeting of the Sioux Valley Medical Association, whose membership is made up of physicians of Minnesota, South Dakota, Nebraska and Iowa, will be held in Sioux City, Iowa, January 20 and 21, under the presidency of Dr. Mathew N. Voldeng, Cherokee, Iowa. The program for the coming meeting is arranged with special reference to the interests of the general practitioner and internist.

Meeting of Southwestern District Medical Society.—At the fourth annual meeting of the Medical Association of the Southwest, held in San Antonio, Texas, November 9, 10 and 11, under the presidency of Dr. Jabez N. Jackson, Kansas City, Mo., the following officers were elected: President, Dr. George H. Moody, San Antonio, Texas; vice-presidents, Drs. Howard Hill, Kansas City, Mo., Charles E. Bowers, Wichita, Kan., David A. Myers, Lawton, Okla., and Asbury J. Vance, Harrison, Ark.; secretary-treasurer, Dr. Fred H. Clark, El Reno, Okla. (reelected); and executive committee, Drs. S. Grover Burnett, Kansas City, Mo., Jacob F. Gsell, Wichita, Kan., Everett S. Lain, Oklahoma City, Okla., James A. Foltz, Fort Smith, Ark., Edward H. Cary, Dallas, Texas, and Charles E. Bowers, Wichita, Kan. Wichita was selected as the place of next meeting.

The Ohio Valley Meeting.—The eleventh annual meeting of the Ohio Valley Medical Association was held in Evansville, Ind., November 10, 11 and 12, under the presidency of Dr. Curran Pope, Louisville, Ky. The following officers were elected: President, Dr. Albert E. Sterne, Indianapolis; vice-presidents, Drs. G. Frank Lydston, Chicago, William D. Haines, Cincinnati, and Louis D. Brose, Evansville, Ind., and secretary-treasurer, Dr. Benjamin L. W. Floyd, Evansville, Ind. It was decided to hold the next meeting in Evansville.

Meeting of Railway Surgeons.—At the annual meeting of the Big Four Railroad Surgeons' Association in Indianapolis, November 4, the following officers were elected: Dr. John J. Kyle, Indianapolis, president; Drs. Charles K. Smith, Kankakee, Ill., Irvin J. Becknell, Goshen, Ind., and James T. Musselman, Paris, Ill., vice-presidents; and Dr. Thomas C. Kennedy, Shelbyville, Ind., secretary-treasurer.

LONDON LETTER

(From Our Regular Correspondent)

London, Nov. 13, 1909.

Exposure of a Notorious Quack

A notorious quack who described himself as "Dr. Walford Bodie, hypnotist, bloodless surgeon, etc.," has been effectually exposed in the law courts. The methods and success of this individual were extraordinary. He demonstrated (?) marvelous healing powers in cases of paralysis to the satisfaction of packed audiences at all the music halls of the country. Indeed from the theatrical point of view he was a "star" of the first magnitude, rivalling in attractive power the most talented artists of the variety stage. Attired in an academic costume with cap and gown he appeared on the stage and delivered a tirade against the medical profession and the hospitals and claimed to cure, by means of electricity, cases of paralysis which had been pronounced incurable. He announced that he knew that there were physicians and students in the audience from some well-known local hospital, such as St. Bartholomew's, who regarded his healing powers with jealousy. He evoked a cheer by challenging them to come on the stage and disprove anything he said. Then a number of patients were introduced for treatment. They were always carried on the stage, the lights were lowered, "Dr." Bodie performed passive movements of the joints of the paralyzed limb and then applied electricity from a battery, the lights were raised and the patient walked off the stage amidst applause. A farmer's son, who paid the quack $5,000 to teach him "bloodless surgery, hypnotism and medical electricity," was simply shown how the tricks were done. He sued for breach of contract. A boy, the subject of infantile paralysis, gave evidence that after he had been treated at two hospitals he saw "Dr." Bodie one morning at the Camberwell Music Hall. It was arranged that he was to come for the evening performance. He was not allowed to walk on the stage, although he could have done so. He was forced into a chair and carried on. He had never used crutches, but a pair were flung across the stage as though he had. "Dr." Bodie moved the limb about, applied the battery and then amid the applause of the audience led him off the stage. Another cripple who had to walk with sticks had his sticks broken before the audience and consequently had the greatest difficulty in getting home, even with the assistance of his mother and brother. A third was made to hold up a chair in sight of the audience as if he had been cured of paralysis of the arm, although only his legs were affected. In other cases the performance was given with the aid of confederates who paid for admission and pretended to be members of the audience. One was said by the "doctor" to be "suffering from catalepsy in a diseased form." The jury found that Bodie induced the plaintiff to enter into the agreement by fraudulent misrepresentations and awarded $5,000 damages.

The Cripples' Home and College at Alton

One of the most remarkable institutions founded in this country is the Cripples' Home and College which has recently been founded by one of the lord mayors of London, Sir William Treloar. It is situated on an estate of seventy acres in Hampshire and consists of wooden pavilions on brick piles connected by covered corridors. Not only is every provision made for the medical treatment of crippled children but also for their education and training in useful arts. There are carpenter, leather-bag and tailoring workshops in which sixty cripples are being trained. Two hundred children under 12 are being treated for active tuberculosis. It is now well recognized that the treatment of such cases in the hospitals of cities, whether as in- or out-patients, is most unsatisfactory. The greatest precautions are taken against the introduction of infectious diseases into the home by new patients. On admission the child's clothes are sterilized and the child is placed in quarantine for a fortnight in a glass cubicle. Most of the cases are tuberculous. The only other elements in the treatment which are regarded as important are diet and open air. Tuberculous abscesses are treated by aspiration under strict aseptic precautions and the results are much better than those of operation which often ends in septic infection. In the summer an open-air school is held in an adjoining forest for those children who can attend, on the lines of the forest school in Charlottenburg. There is also a college for a different purpose—the training in some trade of boys from the ages of 14 to 18 crippled from any cause. Those for whom an open-air life is especially suited learn poultry farming and horticulture. Others learn leather-working, cobbling and tailoring. A proposed extension of this work is the establishing of a self-supporting labor colony. All lads who can be benefited by drilling are drilled. Special exercises are employed in cases of scoliosis and other deformities.

The British Medical Journal's Attack on Nostrums

The *British Medical Journal* has republished in book form the series of articles which appeared in its columns, entitled, "Secret Remedies: What They Cost and What They Contain." The book has had a very large sale and already has had to be reprinted several times, although it has not been extensively advertised, and indeed some leading journals of the lay press have both declined advertisements of the book and also ignored copies that were sent for review. The reason, of course, is that nostrum mongers advertise heavily in the lay press and the papers in question are afraid of offending them. I pointed out previously that any attempt to deal with the nostrum evil would be resisted by several powerful forces, among which was the lay press. The papers which have refused the advertisements are otherwise highly respectable and profess to instruct their readers on everything under the sun but they now refuse to give them the only reliable information ever offered to the public on the highly vaunted remedies which occupy so much of their space. Of course nostrums of this class—infallible cures for consumption, rheumatism, cancer and other diseases—find no place in the advertising pages of the medical press. But it must be confessed that preparations of secret composition for which misleading claims are made, such as antikamnia, are advertised by some journals. Indeed, the cynic may amuse himself by reading in one English medical journal a series of articles denouncing nostrums and quackery of all sorts and finding in the advertising pages preparations of the antikamnia class. The majority of the preparations, however, advertised in the medical journals are produced on ethical lines and no recognized medical journal in this country is controlled by nostrum vendors. We have no journals of the class which exhausts vituperation in resisting the attempts of the Council on Pharmacy and Chemistry of the American Medical Association to deal with the nostrum evil and have the audacity to describe themselves as "independent" when they are dependent in the worst sense—dependent on the pay received for write-ups published to mislead the profession.

The Teaching of Therapeutics

At the Royal Society of Medicine, Prof. Clifford Allbutt opened an important discussion on the teaching of therapeutics in the hospital ward. He said that physicians must be pioneers and could not afford always to wait for the pharmacologists; but there must be mutual watchfulness of each other. Much that we know now to be good came from empirical knowledge and this was still going on, but our empiricism must be of the best, the knowledge of experience. He gave three examples of empirical knowledge which originally came from folk-medicine, and which has stood the test of modern research—digitalis, vaccination and poultices. The latter after suffering abuse had been shown by the work of Bier to be fundamentally reasonable. The student should be assured that apart from pharmacologic proof there was a large tradition of empirical knowledge of great value. He should be told that such and such are the means found useful in clinical experience whether they could be scientifically explained or not. They should go to the bedside as artists to do what good they could for the patient with such lights as they had. Finally, the student should be told he had to deal with living realities. He should be (1) no sceptic or he would endanger his own resourcefulness; (2)

given a clear idea of the *vis medicatrix naturæ*; (3) warned against the overuse of drugs and shown how closely therapeutics depend on prognosis. In the discussion which followed there was some divergence of opinion. Professor Osler described the methods adopted at the Johns Hopkins University and laid stress on their practical advantages. Dr. R. Hutchison relied more on teaching the student to be a sound diagnostician than a pharmacologist and suggested that the time was ripe for some agreement on the main lines of treatment to be adopted in certain well-known diseases, such as gastric ulcer. Dr. A. P. Beddard thought it was impossible to teach therapeutics in the wards.

The Falling Birth-Rate

The registrar-general's return for the quarter ending September again records a decreased birth-rate for England and Wales, the proportion being 25.4 annually, which is 2.5 below the average for the ten corresponding quarters and is the lowest for any third quarter of the year since the establishment of civil registration. On the other hand, the deaths were only 11.6 per 1,000, which was 3.4 below the average for the last ten years, and again the lowest on record for the period in question. Taking the two returns together, the natural increase in population by excess of births over deaths was 123,878, as against 123,197 in 1908. The low death rate is all the more remarkable, as the weather conditions have been unfavorable. The summer months included only one substantial spell of fine seasonable weather. Thanks to the great attention which is now being paid to infant hygiene, the mortality of infants under 1 year showed the large decrease of 38.6 per cent.

Deaths Due to Veronal

The public have no difficulty in obtaining hypnotic veronal in the form of tablets from the druggists. A considerable number of deaths following the use of the drug has now been recorded, and in several cases the dose taken was by no means large—10 or 15 grains. In one fatal case the subject, a well-known physician, the son-in-law of an eminent London surgeon, died in the prime of life.

Death of a Pathologist from Glanders Inoculation

The death at the early age of 30 years of Dr. John Herbert Wells, adds one more to the list of martyrs in the cause of scientific [illegible] reer of promise has been cut short. [illegible] imself in original research, Dr. Wells j[illegible] of therapeutic inoculation at St. Mary's Hospital, and in conjunction with the chief, Sir A. E. Wright, did valuable original work. In February, 1908, he began a research on the treatment of glanders, and the patient on whom his treatment was tried recovered, but in his laboratory work Dr. Wells had the misfortune to contract the disease. After eighteen months of suffering, he died, leaving a widow and two children unprovided for. An influential committee has been formed to collect a fund for their benefit.

The Fate of the Dolicho-Cephalic Blond Race

At the Royal Anthropological Institute of Great Britain, Professor Retzius of Stockholm delivered the Huxley lecture on "The Fate of the Dolicho-Cephalic Blond Race." The son of Anders Retzius, the founder of modern craniology, his lecture was worthy of his origin, and proved of great interest. He finds that 87 per cent. of the Swedes are long-headed and 73 per cent. have fair hair. These he regards as pure representatives of the North European race, which is still found in Scandinavia, North Germany and Britain, but from the earliest neolithic time spread widely over Europe. He regards them as the aborigines of Europe. Of their future, Professor Retzius takes a gloomy view. He thinks the qualities which made them great in the past unfit them for the life of industrial civilization. The round-headed, dark-haired race has supplanted them in central Europe by superior industrial qualities and threatens ultimately to overwhelm them.

Indian Conference on Malaria

The government of India proposes to form a permanent organization to inquire, systematically, into the problems, both practical and scientific, connected with malaria in India. It is estimated that over 1,000,000 deaths per annum occur from this disease. It has been decided to hold a conference in consultation with the administrative medical officers of the various provinces. Three groups of problems will be discussed: (1) The distribution of malaria in each province in relation to the sickness and mortality it produces; (2) measures of prevention which have been adopted in different provinces, such as drainage, mosquito destruction, and quinin distribution and their success or otherwise.

PARIS LETTER

(From Our Regular Correspondent)

Paris, Nov. 4, 1909.

Association of the Members of the Faculties of the Medical Schools

The *Association des membres du corps enseignant des Facultés de médecine*, founded last spring (The Journal, April 10, 1909, lii, 1192; May 22, 1909, lii, 1676) held its second convention October 29 and 30 at the Paris school, under the presidency of Prof. J. Courmont of Lyons, assisted by Professors Reclus of Paris and Gross of Nancy. During four long meetings the delegates studied, article by article, the new ministerial project for reform of medical studies. The convention asked for the adoption of the principle sanctioning interchange of students between schools during the entire student period. The present regulations permit the student in his fifth year to study in a hospital either in a foreign country or in France, provided the necessary conditions are met. What is demanded now is that the student should be permitted to exchange one university for another during any of the years as is done abroad, especially in Germany, where the student has the privilege of taking parts of his course in the university which has the reputation of giving this part of the instruction best. The convention also considered the subject of practical instruction. Unfortunately, in the greater number of our university cities, especially in Paris, the hospitals belong not to the universities but to the public charities (*Assistance Publique*) and the latter sometimes adopt measures not favorable to instruction. Thus, a few years ago, the Public Charities of Paris made the dispensary consultations independent of the internal hospital service. The *stagiaire* students at the hospital are thus deprived of the possibility of seeing cases frequent in ordinary practice but not treated in hospitals. It is the universal opinion that the consultation is the place where students can get the best practical instruction. Doubtless the students might attend the dispensary consultation during a part of their period of hospital study, but in Paris, at least, these special consultation services are directed by the youngest members of the hospital staff, whose clinical experience hardly justifies entrusting them with the most difficult portion of practical instruction. Therefore, on the motion of Professor Delbet of Paris, the convention unanimously resolved that dispensary consultations should be organized supplementary to each clinical service.

The Next Congress of Practitioners

The Congresses of Practitioners, devoted exclusively to the discussion of questions of professional interest, constitute a novelty in the history of the French medical profession. The first of these congresses was held in Paris in 1907, the second in Lille in 1908, and the third will be held in Paris at the end of March, 1910. The approaching congress will carry on the campaign for the suppression of the illegal practice of medicine, and will also oppose the exploitation of physicians by mutual benefit societies. It will study the law on public health, the question of the reservation of the hospitals for the poor exclusively, and the relations of physicians with administrative bodies.

Depopulation in France

Statistics in regard to the fluctuation of population in France during the first semester of the present year have just been published. Here are the comparative figures of births and deaths for the first semester of the years 1908-1909:

	1909	1908
Births	398,710	411,402
Deaths	426,913	401,894

Thus the number of births has diminished by 12,692, and at the same time the number of deaths has increased by 25,019. The population of France has diminished by 28,203, figures representing the excess of deaths over births. Almost all the departments of France have contributed to this diminution of the population, but the excess of deaths over births has been particularly marked in the departments which contain large cities, as the departments of the Seine (Paris), Rhône (Lyons), Gironde (Bordeaux), Bouches-du-Rhône (Marseilles), Haute-Garonne (Toulouse), etc. Only in some departments of the north and west is an excess of births over deaths recorded.

The Oath of Hippocrates and Medical Ethics

Instruction in medical ethics being generally very imperfect, Dr. de Grissac believes that it would be advantageous to print on the first page of the thesis for the doctor's degree, the oath of Hippocrates, which sets forth all the principles of ethics, although in archaic form. The *Syndicat des médecins* *de la Seine* has resolved that the oath of Hippocrates be hereafter printed on the first page of all the theses for the degree of doctor in medicine presented before the French schools. At the Montpellier medical school it has been the traditional usage to print this oath at the end of the thesis.

Improvement of the Night Medical Service in Paris

In consequence of complaints which were recently made on the subject of the workings of our night medical service (The Journal, Oct. 9, 1909, liii, 1201) a measure to make it more prompt has just been adopted. The booths in the streets used as stations for cabs and automobiles will hereafter remain open permanently. The public will find there, at any hour, the necessary information in regard to the night medical service, as well as the names and addresses of the physicians, midwives and pharmacists charged with the night service. At these posts, a police assistant mounted on a bicycle will be especially charged with the duty of summoning and accompanying the physician or midwife to the home of the person requiring services.

Sale of Oysters

In view of numerous cases of typhoid fever apparently caused by the consumption of diseased oysters, M. Chéron, under-secretary of the navy, has just appointed a commission, presided over by the inspector-general of the fisheries, to prepare hygienic regulations for the oyster-farms authorized to furnish oysters for consumption.

Laboratory Alcohol and the Public Revenue

For some time a notice has been posted on the door of the laboratory of the Pasteur Institute calling attention to the fact that the cost of the alcohol used has been considerably increased by revenue duties, and requesting economy in its use. All scientific and charitable institutions are affected by the duty, which was imposed in view of certain abuses which have been shown in the institutions of two large provincial cities. It will entail a burdensome expense on our laboratories. The price of alcohol at 90 degrees is raised by it to 4 francs 50 centimes a liter (about $3.50 a gallon); that of absolute alcohol to 6 francs a liter (about $4.75 a gallon). There will be an annual increase of expense for the Pasteur Institute of more than 10,000 francs ($2,000).

Traumatic Tuberculosis and the Law on Industrial Accidents

At a recent session of the Academy of Medicine, Dr. Mosny, physician of the hospitals of Paris, presented a report on the relations between tuberculosis and industrial accidents, which often cause many difficulties in legal medicine. Dr. Mosny admits that the influence of industrial traumatisms on the outbreak, and the aggravation of tuberculous lesions may be manifested in various ways, so that from the point of view of the employer's responsibility, three types should be distinguished: 1. The tuberculosis has really been inoculated in the course of work as in the case of butchers, etc. It is then undeniably the direct and immediate consequence of the accident and full compensation should be allowed. 2. The tuberculosis, hitherto latent, has been fanned into flame again by a traumatism without which perhaps it would never have broken out. Mosny thinks that a traumatism capable of causing such consequences is a source of harm to the victim equalled by that which would be occasioned by actual infection with tuberculosis; in other words, the employer's responsibility should be considered as complete as in the first case. 3. The traumatism has created in the tuberculous subject a new focus or has aggravated preexisting lesions. In this case the indemnity should be limited to the difference existing between the previous salary and the smaller salary which the workman is capable of earning after the accident.

Etiology and Prophylaxis of Typhoid in France

At the same session of the Academy of Medicine, Dr. H. Vincent, professor in the school of military hygiene at Val-de-Grâce, called attention to the great frequency of typhoid fever in France. The proportion of deaths due to this disease is 27.6 per 100,000 inhabitants, while it is only 17.5 in England, 10.2 in the Netherlands and 10.3 in Germany. In the last seventeen years the number of typhoid deaths may be reckoned as about 100,000, the equivalent of the population of a large city. Moreover, this disease strikes down by preference young people, thus entailing very serious consequences from the demographic and economic point of view in a country with a low birth-rate like France.

Drinking water, foodstuffs soiled by flies, milk, oysters, sweet cider prepared with contaminated water, uncooked vegetables grown on ground fertilized by sewage, are important causes. The disposal of fecal matter in sewage-fields, practiced in many regions, is one of the causes which contribute most to the spread of typhoid fever. The discovery of chronic bacillus-carriers has thrown light on many apparently spontaneous cases of typhoid and paratyphoid. Dr. Vincent submitted a long program of antityphoid measures, comprising the following: popular elementary education of children and adults through physicians in regard to the nature of infectious diseases, the means of transmission and the prophylaxis; appointment of physicians as instructors of hygiene in the various departments of France; education of physicians to be specialists in hygiene, and special instruction in epidemiology in the medical schools; creation of schools of disinfection for the training of squads of disinfectors; organization of an increasing number of laboratories or stations of epidemiologic and bacteriologic research to aid in the battle against typhoid by bacteriologic investigation of suspected cases, by examination of bacillus-carriers; periodical examination of drinking-waters, etc. To these measures it is indispensable to add prohibition of the disposal of fecal matter in sewage-fields. In discussing Vincent's paper, Dr. Vallin remarked that typhoid fever is less frequent in the north of France, where beer is habitually drunk, than in the south, where water is used to dilute wine. Widal emphasized the importance of isolating typhoid patients in hospitals as cases of contagion in the wards are not infrequent.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, Nov. 3, 1909.

The Imperial Association of German Physicians and the Imperial Insurance Bill

The counter organization to the Leipsic league which was founded a few months ago and which has assumed the haughty title of Imperial Association of German Physicians (*Reichsverband deutscher Aerzte*) has in the same way as the business committee of the German Medical Association (*Deutsche Aerztevereinsbund*) sent to the authorities a critique of the bill for an imperial insurance law in which naturally many demands are made which are in accord with the bill worked out by the government and are opposed to the demands of the medical association. Although the imperial association rejects the free choice of physician and wishes to leave the regulation of the medical system to a free agreement between the physicians concerned and the sick benefit societies (*Krankenkassen*), it does not differ from the medical association, for although the latter society wishes the free choice established, as a rule, it does not demand its compulsory introduction. While the medical association makes the demand that the insurance societies make the agreements as to the conditions of the contract only with the medical organizations, the imperial association wishes that such arrangements with private physicians be permitted as well.

This whole counter agitation is of little significance, as the imperial association comprises scarcely 2,000 members in contrast to the 24,000 members of the medical association.

Draft of New Penal Code

For some years there has been an urgent demand for a new penal code, since a number of the punishments imposed are antiquated. The draft of a new code elaborated by a commission of experts appointed by the government for this purpose has just appeared and contains a number of provisions that are of interest from their relation to sanitary matters. The age of criminal responsibility is advanced from 12 to 14 years. Confinement in an inebriate asylum can be ordered by the judge. A further provision against drunkenness is the possibility of forbidding the use of the saloon, and what is especially important, criminal responsibility for unconsciousness (*Bewusstlosigkeit*) as the result of voluntary inebriety, as well as for drunkenness dangerous to the general welfare. Discretion is given the judge to exempt from punishment in general those of defective responsibility. As a protection to the worker in dangerous trades special penalties are provided for removing or failing to provide protective devices. We will return to this important subject.

Personal

Professor Franz, the gynecologist of Jena, has been appointed as director of the gynecologic clinic at Göttingen as successor of Professor Runge.

Privy Councilor Dr. Wehmer, advisory physician to the Berlin police department, died October 31, at the age of 54, from heart failure, while riding his wheel. Wehmer had made himself a name in various branches of state medicine; he had devoted himself especially to the subjects of midwifery, school sanitation, and veterinary medicine. Among his important works we may mention: "The Sanitary Conditions of Berlin," "A Handbook of Public Health," "The Principles and an Encyclopedia of School Sanitation." Since 1897 he was president of the German Public Health Association of Berlin.

Full Time School Physicians

Three school physicians have been appointed for the evangelical schools of Chemnitz to devote their whole time to the work, beginning at Easter, 1910, at the salary of $1,750, to be increased to $2,250 (7,000 to 9,000 marks); in addition a pension is provided, but private practice is interdicted. Chemnitz has heretofore employed 17 school physicians on part time for its 34 schools with 42,000 pupils.

Monument for Fabricius von Hilden

The city authorities of Hilden (of the Rhine province) have determined to erect a monument to the famous seventeenth century surgeon, Fabricius von Hilden, who was born at that place, June 25, 1560. The unveiling is to occur in the summer of 1910, on the occasion of the three hundred and fiftieth anniversary of his birth. The city authorities have issued an appeal to all physicians for contributions.

Scarlet Fever Epidemic in Silesia

According to an official statement of the Silesian provincial medical board there have occurred in the district of Oppeln, since July 1, 2,200 cases of scarlet fever. By far the greatest number occurred in the industrial district of upper Silesia. In many localities the mortality reaches 30 per cent.

Cholera in East Prussia

The number of cholera cases in east Prussia has increased during the last week, but as before, the cases are sporadic.

Spinal Infantile Paralysis

Small epidemics of spinal infantile paralysis are now appearing in Silesia and in Mecklenburg. So far no fatal cases have been observed.

Tuberculosis Examinations by the Berlin Municipal Laboratory

The serious complaints that have been directed against our city government for the order described in the previous letter have borne fruit sooner than was to be expected. The administration has given notice that examinations of tuberculous material will be conducted also in the municipal laboratory free of cost. It would be very satisfactory if the administration on this occasion had announced a change in the policy maintained up to the present time and would pay more attention in future to the sanitary suggestions that are made by the medical profession.

German Institute for Medical Missions

A short time ago the German institute for medical missions was ceremoniously dedicated at Tübingen. This is an institution which has been established at the suggestion of the Stuttgart association for medical missions with the cooperation of all the evangelical missionary societies of Germany and Switzerland. The principal building furnishes accommodations for 32 students of medicine and missionaries. In addition there is a woman's building (*Schwesternheim*) that provides for 15 women medical students and future missionary midwives. In both houses there are for the inmates large society rooms, dining rooms, library, etc. The institute for medical missions is intended to make the students of medicine at the university of Tübingen and the members of the missionary societies acquainted with the requirements of the missionary service and in addition to give instruction in tropical hygiene and tropical medicine. For purposes of instruction, which is to be strictly scientific, it is planned to establish a clinic for tropical disease with the necessary laboratories at a cost of from $75,000 to $100,000 (300,000 to 400,000 marks). In order that no misuse of the knowledge obtained shall be made by those who are not physicians, every missionary who enters the institution must sign a statement that he will not use the knowledge and skill obtained for commercial purposes, and that he will not, on the ground of his education in this institution, style himself a missionary physician, and that he will not practice medicine at any time, either in Germany or other European countries, unless he has fulfilled the legal requirements of the individual nations. The medical education of the missionaries lasts one year, the students pay $87.50 (350 marks) for the summer semester, and $112.50 (450 marks) for the winter semester and missionaries pay for the year's instruction, $300 (1,200 marks).

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Nov. 6, 1909.

Investigations Into the Life of Medical Students

An interesting statistical research is just now going on in Vienna, the results of which are looked forward to with great eagerness by the circles interested in the outcome. Every medical student enlisting this winter term or the next (summer) term, at the Vienna University, will be asked to fill out a paper containing a series of questions: age, nationality, religion, language, financial position, previous education, and reasons for taking up medicine as a life-work. It is hoped that a large percentage of the students will take the slight trouble necessary to answer the questions. The student's name need not be given, only the initials. Separate lists will be kept for women. The only precaution taken is the earnest request to abstain from wilful misstatements.

As a rule medical students here belong to the poorer or at least not well-to-do classes of the population. Therefore, when once graduated they try to earn a living as quickly as possible, which explains why, generally speaking, medical fees in this country are much below English and American rates. Although warnings intended to stop the steady influx of new students to the profession have been published, the result has been inadequate. Therefore the investigators are directed also to find out why this special occupation was chosen by the individual.

Austrian Search for Scleroma

By an order of the ministry of the interior, all health officers are henceforth bound to report every case of rhinoscleroma to the ministry. For this purpose, a short description of the clinical symptoms, the histopathology and the geographical regions where it is found is furnished. Only a narrow strip of land bordering on Hungary and Russia, and part of the empire between Italy and Hungary may be looked on as a focus of infection. Altogether, there are about 320 cases now under observation, but without doubt, the actual number of persons afflicted is much larger. The order is partly an outcome of the last medical congress, partly the result of the work of the new health department, which in a remarkably progressive way tries to keep abreast of the advances in the science of hygiene.

Sale of Radium Salt

The production of radium has been carried on in Johannistal to such a degree that at present there is available a quantity equivalent to 1 gm. (15 grains) of the pure substance. Several tons of the ore had to be worked up before an appreciable amount was obtained. It is intended now to put the available quantity on the market solely for scientific purposes and for charitable institutions. It will be sold in quantities of 1 mg. (about 1/60 grain) of the 5 per cent. and the 10 per cent. salt. Bromid of radium has been chosen. The price of the 5 per cent. salt will be 1080 crowns ($244) per portion (1/60 grain). The sale will take place in the radium institute just now in course of erection. A magnificent gift by an anonymous benefactor, who gave $100,000 for this purpose on the understanding that an equal sum should be provided by the state, enabled the Vienna University to obtain its radium research institute, the first in the world as regards equipment for investigators. The necessary appropriation having been voted, the building is now almost ready for use.

Death of Professor Monti

By the death of Professor Monti, which took place during the last days of October, the Vienna medical faculty loses one of its best known and most honored members. He was a specialist in diseases of the children, and one of the founders and the director of the Vienna Poliklinik, where he was the head of the pediatric department. His courses were much frequented by Americans. He was the initiator of the "childrens' homes" in this country, and the convalescent homes on the Austrian coast of the Adriatic Sea were altogether the result of his strenuous effort. His merits were recognized by the emperor, who not only selected him as physician for his numerous grandchildren, but also conferred on him the title of *Hofrath* (court councilor). The contributions of the deceased physician to medical literature were not very numerous, his work having been chiefly practical and arduous endeavors to raise the standard of health and of feeding among the offspring of the poorest. His death will be sincerely lamented by many thousands of grateful patients and friends.

Pharmacology

ECHINACEA CONSIDERED VALUELESS

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W. A. Puckner, Secretary.

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When this drug was first introduced, it was a typical nostrum, with exaggerations regarding its therapeutic value that were somewhat more gross than usual. It was later adopted by the eclectic school without being freed from the stigmata of its origin. It was also pressed into use as the main ingredient of such proprietary preparations as echafolta, ecthol, eusoma, etc. Efforts have been made to get the regular profession to use it in these various forms.

According to J. U. Lloyd (*Pharm. Review*, vol. xxii, p. 9-14), the introduction of echinacea into eclectic medicine is due to the efforts of Dr. H. F. C. Meyer to increase the sale of Meyer's Blood Purifier, a secret remedy containing it. The following is a literal copy of the label on this nostrum:

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>
> Dose.—One half to one fluid-drachm 3 or 4 times a day.
>
> Manufactured by H. C. F. Meyer, M.D.
>
> Price, $ Pawnee City, Neb., U. S. A.
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Eusoma Pharmaceutical Company), complains that he has been unable to interest regular physicians in the remedy. He reviews the statements of previous authors and reports eight cases of infection, only two being acute or extensive, in which he used it with asserted success.

In view of the lack of any scientific scrutiny of the claims made for it, echinacea is deemed unworthy of further consideration until more reliable evidence is presented in its favor.

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FALSE UNICORN (HELONIAS)

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The Council voted to refuse to recognize false unicorn as a non-proprietary article and the following statements, submitted by a subcommittee, were ordered published.

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FALSE UNICORN—HELONIAS

Helonias dioica, or more properly *Chamælirium luteum*, is a plant, preparations of which enter into various proprietary mixtures for diseases of the female pelvic organs. In the advertisements of these preparations it is usually credited with hemostatic powers and is asserted to be a uterine tonic.

There is practically no reference to this drug in reliable medical literature, and as there is no evidence worthy of credence to support the claims made for it, the drug was not considered deserving of a place in the Pharmacopeia. Hence, it may be regarded as a drug not worthy of attention of physicians.

Correspondence

Microscopic Moving Pictures

To the Editor: In the daily papers there have recently appeared items to the effect that Jean Commandon, a French scientist, has demonstrated in Paris in the presence of the members of the Academy of Science, his most wonderful invention, the microcinematograph, a machine which enables him to take moving pictures of microscopic objects and project them in motion on the screen. The New York *World* of October 31 says:

> "No longer is it possible for a bacillus, however microscopic, to live and move secretly. At last the intimate existence of an active microbe has been betrayed by the cinematograph . . . With this new instrument living organisms one thousandth of a millimeter in diameter are photographed and magnified, and can be studied . . . Professor Daster, an eminent bacteriologist, says it is impossible to estimate the importance of this advance in science, which opens a new world to the human eye, and reveals facts about minutest organism hitherto unsuspected."

I desire to call attention to the fact that this invention is nothing new; that the idea of such a machine was conceived by me some fourteen or fifteen years ago, *and that I demonstrated it*, after the construction has been completed, as far back as 1897, in my private office in the presence of Dr. Wm. H. Katzenbach, Dr. E. Bradley, Dr. Goodwille, Mr. David St. Clair, and others of prominence.

After this demonstration took place, the "micromotoscope," as I named the machine, was described in the *Scientific American*, July 31, 1897, from which the following is quoted:

> "The principles of the ki[illegible] have been applied
> to the microscope with so[illegible] by Dr. Robert L.
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> success only after many [illegible] in adjusting the
> ective of the microscope [illegible] sort of light and
> rapidly moving film . . . This machinery is turned by a
> and its ordinary capacity is about 1,600 pictures per
> . . . The advantages of the microscopic photography to
> opy are evident, especially as regards the action of bacteria
> od cells . . . Numerous photographs of bacteria were
> but the motion happened to be an up-and-down one and
> no change of position in the field."

The same year (1897) the micromotoscope was again described and illustrated in *Photograms*, a London periodical, which said: "During the year two distinct steps have been made in kinematography"; then, after giving a description of Dr. Macintyre's invention in radiography, the editor proceeded:

> "Dr. Watkins, on the other hand, combined kinetography and photomicrography, so as to be able to record and reproduce the movements of objects so small as corpuscles, rotifers, microbes. This power of studying the motion of the corpuscles is expected to prove of infinite value in the diagnosis of certain diseases. From this it will be seen that kinetography, which commenced as a scientific industry, has made distinct steps in scientific progress, in addition to captivating the public taste . . ."

Not only was credit given me in the periodicals quoted above, but the "Standard Dictionary," 1905 edition, in defining the micromotoscope, refers to me as its inventor.

At about 1898, I again demonstrated this machine to a private audience at my house in the presence of Mr. Hopkins, editor of the *Scientific American*, Dr. G. L. Curtis, Dr. Fitch, Dr. J. H. Gunning, Mr. Robert Niles, and a few others of this city.

With the assistance of Mr. Thomas F. Livingston and Mr. E. W. Clausing, the micromotoscope was also shown at the Grand Central Palace of this city in the fall of 1897 at the Trained Nurses' and Pure Food Exhibition. Numerous microscopic objects, taken with the micromotoscope, were projected on the screen at this exhibition. Among others were the circulation of the blood in the web of the frog's foot, rotifers in stagnant Croton water, an ameboid leucocyte, moving blood-cells under the microscope, moving germs in fermenting urine, micrococci and bacteria, etc. Some of these positives were printed in the Edison Laboratory, East Orange, N. J.

At the time of this exhibition Dr. F. M. Jeffries of the New York Polyclinic furnished me with some specimens of typhoid germs, of which I made micromotoscope negatives. The above pictures were shown to over 10,000 people; one night these photographs were thrown right across the length of the immense main hall, producing a magnification of about 1,500,000 diameters, according to our rough figures. Some of the microscopic objects looked like "whales and sea-serpents," as some in the audience observed. Charles L. Bristol, Professor of Biology in the New York University, remarked at the time that he had not supposed that this could be done.

Mr. F. M. Ramsden of Santiago, Cuba, who was very much interested in this scientific achievement, is in the possession of the only photograph I took of my first micromotoscope outfit in position ready to work. The first pictures that were taken by it were specially mounted for and presented to Dr. Abraham Jacobi, who now has them, and who readily remembered it, when I mentioned the fact to him a few days ago.

Since this first outfit, I have gradually improved my camera, making it more simple, until I have at last produced the unique machine which I am now using. In experimenting on this micromotoscope, I have used up enough machinery and material to fill up a good-sized junk-shop.

The latest demonstration of the last pictures taken with this machine took place in Chicago on June 17 of this year, where I showed it to an audience of 500 doctors of the National Eclectic Association. Had I not been delayed with the construction of my new projecting machine, a demonstration of the micromotoscope would have taken place at the American Medical Association meeting in Atlantic City, last June.

I can cite many more instances to prove the validity of my claim of being the first to conceive this idea and demonstrate with a machine and photographs. The credit, then, for this invention rightly belongs to an American and not to a Frenchman.

Robert L. Watkins, M.D., New York.

Free Use of the Mails for Literature on Public Health

To the Editor:—About two years ago an effort was made by the state health officer of Florida to obtain for the various State and Territorial boards of health of the United States the privilege of free service through the mails for the distribution within State and Territory lines of sanitary and health bulletins and matters connected therewith. The measure was formulated into House Bill No. 11,317 and introduced by Hon. S. M. Sparkman, representative from the First Congressional District of Florida. When this measure was first proposed, the state health officer of Florida wrote to every State and Territorial board of health asking their cooperation through their representatives in Congress. Encouraging replies were received from all. It was hoped that the measure would become a law, especially since Mr. Sparkman received decided encouragement in his interview on the subject with the Postmaster-General. Later on, however, Mr. Sparkman was informed that President Roosevelt opposed the granting of this privilege; hence, of course, it was useless to proceed further with the measure.

The bill, as introduced, read as follows:

A BILL

II. R. 11317.

To extend the franking privilege to literature published by boards of health of states, territories, and municipalities in the United States.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled:

That it shall be lawful to transmit through the mails, free of *postage, any printed letters circulars, documents, pamphlets, and* literature relating exclusively to the public health, which shall be issued by or under the authority of any board of health of any state, territory or city in the United States.

Sec. 2. That every such letter or package to entitle it to pass free shall bear over the words "Public Health Business" an indorsement showing the name of the state, territorial or municipal board of health, as the case may be, whence transmitted. And if any person shall make use of any such official envelope to avoid the payment of postage on his private letter, package or other matter in the mail, the person so offending shall be deemed guilty of a misdemeanor and subject to a fine of three hundred dollars, to be prosecuted in any court of competent jurisdiction.

Now, there seems to be no good reason why the United States mails should not be made a medium for disseminating useful and instructive sanitary information to the people. Measures taken to inform the general public on questions relating to their health and life seem as important as political documents—to the mind of every intelligent citizen even more so; certainly capable of favorable comparison with the instance reported in the public press of "the franking of a set of furniture through the mails by a representative in Congress from his home at Washington when near the completion of his term of office."

This matter is now submitted to the medical profession and the health officials of the United States with the hope that they may approve the measure, give it strong endorsement to congressional delegations from each state of the union, and urge it with all fervency as an appeal to benefit humanity and to increase the life tenure of the citizen.

Joseph Y. Porter, Key West, Fla.,
State Health Officer of Florida.

Ability, the Real Test

To the Editor: There is a tendency on the part of the embryonic medical practitioner to become imbued with the foolish idea, after he has formally done with the state medical examining board, and procured a license to practice the healing art, that the public cares only to know that he has spent so many years in the high school, so many years in the academy, so many years in the college of liberal arts, so many years in the medical department of some university, and so much time as an intern.

The length of time spent in a college, or a dozen colleges, is no guarantee of knowledge acquired, nor is it a gage by which the public may reckon the fitness of a man to practice the principles of the craft. In fact, years have nothing to do with gaging the mental capacities of men. Men's mental abilities vary. Man's individual ability is as varied as his undertakings, and he achieves the really great things only after he has tried himself out. Therefore, there should be but one test—the test of ability, not the test of time as spaced off by college men. Nor is this statement intended to cast any reflections whatever on those who are engaged in the teaching of medicine.

Avoid the exaggeration, and remember this: the public cares little how long we have studied a particular subject, but rather how much we know of it!

Clyde A. Henry, M.D., Farson, Iowa.

Pharmacology

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These absurd claims of an evidently ignorant man have passed into the more recent proprietary advertising matters and into much of the eclectic writings. Indeed, the seemingly impossible has been attained by even surpassing Meyer's all-but-all-embracing claims. Not content with endorsing echinacea as a positive and speedy "specific" for rattlesnake bite, syphilis, typhoid fever, malaria, diphtheria and hydrophobia, later enthusiasts have credited it with equally certain curative effects in tuberculosis, tetanus and exophthalmic goiter, and with the power of retarding the development of cancer.

It is worth noticing—although it is not surprising—that these far-reaching claims have been made on no better basis than that of clinical trials by unknown men who have not otherwise achieved any general reputation as acute, discriminating and reliable observers. No attempt seems to have been made to verify these claims by accurate scientific methods, clinical or otherwise, although this could very easily have been done.

Not one of the eulogistic reporters and exploiters seems to have considered it worth while to determine by the simplest control experiments whether the drug possesses any bactericidal or antiseptic powers whatever. It is therefore not very strange that discriminating physicians have failed to show much enthusiasm. One of the warmest endorsers of echinacea, C. S. Chamberlain (who later became the president of the Eusoma Pharmaceutical Company), complains that he has been unable to interest regular physicians in the remedy. He reviews the statements of previous authors and reports eight cases of infection, only two being acute or extensive, in which he used it with asserted success.

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After this demonstration took place, the "micromotoscope," as I named the machine, was described in the *Scientific American*, July 31, 1897, from which the following is quoted:

> "The principles of the kinetoscope or mutoscope have been applied to the microscope with some interesting results by Dr. Robert L. Watkins of this city. The instrument, though simple, was made a success only after many experiments and failures in adjusting the objective of the microscope in a line with the right sort of light and a rapidly moving film . . . This machinery is turned by a crank and its ordinary capacity is about 1,600 pictures per minute . . . The advantages of the microscopic photography to microscopy are evident, especially as regards the action of bacteria and blood cells . . . Numerous photographs of bacteria were taken, but the motion happened to be an up-and-down one and showed no change of position in the field."

The same year (1897) the micromotoscope was again described and illustrated in *Photograms*, a London periodical, which said: "During the year two distinct steps have been made in kinematography"; then, after giving a description of Dr. Macintyre's invention in radiography, the editor proceeded:

> "Dr. Watkins, on the other hand, combined kinetography and photomicrography, so as to be able to record and reproduce the movements of objects so small as corpuscles, rotifers, microbes. This power of studying the motion of the corpuscles is expected to prove of infinite value in the diagnosis of certain diseases. From this it will be seen that kinetography, which commenced as a scientific industry, has made distinct steps in scientific progress, in addition to captivating the public taste . . ."

Not only was credit given me in the periodicals quoted above, but the "Standard Dictionary," 1905 edition, in defining the micromotoscope, refers to me as its inventor.

At about 1898, I again demonstrated this machine to a private audience at my house in the presence of Mr. Hopkins, editor of the *Scientific American*, Dr. G. L. Curtis, Dr. Fitch, Dr. J. H. Gunning, Mr. Robert Niles, and a few others of this city.

With the assistance of Mr. Thomas F. Livingston and Mr. E. W. Clausing, the micromotoscope was also shown at the Grand Central Palace of this city in the fall of 1897 at the Trained Nurses' and Pure Food Exhibition. Numerous microscopic objects, taken with the micromotoscope, were projected on the screen at this exhibition. Among others were the circulation of the blood in the web of the frog's foot, rotifers in stagnant Croton water, an ameboid leucocyte, moving blood-cells under the microscope, moving germs in fermenting urine, micrococci and bacteria, etc. Some of these positives were printed in the Edison Laboratory, East Orange, N. J.

At the time of this exhibition Dr. F. M. Jeffries of the New York Polyclinic furnished me with some specimens of typhoid germs, of which I made micromotoscope negatives. The above pictures were shown to over 10,000 people; one night these photographs were thrown right across the length of the immense main hall, producing a magnification of about 1,500,000 diameters, according to our rough figures. Some of the microscopic objects looked like "whales and sea-serpents," as some in the audience observed. Charles L. Bristol, Professor of Biology in the New York University, remarked at the time that he had not supposed that this could be done.

Mr. F. M. Ramsden of Santiago, Cuba, who was very much interested in this scientific achievement, is in the possession of the only photograph I took of my first micromotoscope outfit in position ready to work. The first pictures that were taken by it were specially mounted for and presented to Dr. Abraham Jacobi, who now has them, and who readily remembered it, when I mentioned the fact to him a few days ago.

Since this first outfit, I have gradually improved my camera, making it more simple, until I have at last produced the unique machine which I am now using. In experimenting on this micromotoscope, I have used up enough machinery and material to fill up a good-sized junk-shop.

The latest demonstration of the last pictures taken with this machine took place in Chicago on June 17 of this year, where I showed it to an audience of 500 doctors of the National Eclectic Association. Had I not been delayed with the construction of my new projecting machine, a demonstration of the micromotoscope would have taken place at the American Medical Association meeting in Atlantic City, last June.

I can cite many more instances to prove the validity of my claim of being the first to conceive this idea and demonstrate with a machine and photographs. The credit, then, for this invention rightly belongs to an American and not to a Frenchman.

Robert L. Watkins, M.D., New York.

Free Use of the Mails for Literature on Public Health

To the Editor:—About two years ago an effort was made by the state health officer of Florida to obtain for the various State and Territorial boards of health of the United States the privilege of free service through the mails for the distribution within State and Territory lines of sanitary and health bulletins and matters connected therewith. The measure was formulated into House Bill No. 11,317 and introduced by Hon. S. M. Sparkman, representative from the First Congressional District of Florida. When this measure was first proposed, the state health officer of Florida wrote to every State and Territorial board of health asking their cooperation through their representatives in Congress. Encouraging replies were received from all. It was hoped that the measure would become a law, especially since Mr. Sparkman received decided encouragement in his interview on the subject with the Postmaster-General. Later on, however, Mr. Sparkman was informed that President Roosevelt opposed the granting of this privilege; hence, of course, it was useless to proceed further with the measure.

The bill, as introduced, read as follows:

A BILL

H. R. 11317.

To extend the franking privilege to literature published by boards of health of states, territories, and municipalities in the United States.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled:

That it shall be lawful to transmit through the mails, free of postage, any printed letters circulars, documents, pamphlets, and literature relating exclusively to the public health, which shall be issued by or under the authority of any board of health of any state, territory or city in the United States.

Sec. 2. That every such letter or package to entitle it to pass free shall bear over the words "Public Health Business" an indorsement showing the name of the state, territorial or municipal board of health, as the case may be, whence transmitted. And if any person shall make use of any such official envelope to avoid the payment of postage on his private letter, package or other matter in the mail, the person so offending shall be deemed guilty of a misdemeanor and subject to a fine of three hundred dollars, to be prosecuted in any court of competent jurisdiction.

Now, there seems to be no good reason why the United States mails should not be made a medium for disseminating useful and instructive sanitary information to the people. Measures taken to inform the general public on questions relating to their health and life seem as important as political documents—to the mind of every intelligent citizen even more so; certainly capable of favorable comparison with the instance reported in the public press of "the franking of a set of furniture through the mails by a representative in Congress from his home at Washington when near the completion of his term of office."

This matter is now submitted to the medical profession and the health officials of the United States with the hope that they may approve the measure, give it strong endorsement to congressional delegations from each state of the union, and urge it with all fervency as an appeal to benefit humanity and to increase the life tenure of the citizen.

Joseph Y. Porter, Key West, Fla.,
State Health Officer of Florida.

Ability, the Real Test

To the Editor: There is a tendency on the part of the embryonic medical practitioner to become imbued with the foolish idea, after he has formally done with the state medical examining board, and procured a license to practice the healing art, that the public cares only to know that he has spent so many years in the high school, so many years in the academy, so many years in the college of liberal arts, so many years in the medical department of some university, and so much time as an intern.

The length of time spent in a college, or a dozen colleges, is *no guarantee of knowledge acquired*, nor is it a gage by which the public may reckon the fitness of a man to practice the principles of the craft. In fact, years have nothing to do with gaging the mental capacities of men. Men's mental abilities vary. Man's individual ability is as varied as his undertakings, and he achieves the really great things only after he has tried himself out. Therefore, there should be but one test—the test of ability, not the test of time as spaced off by college men. Nor is this statement intended to cast any reflections whatever on those who are engaged in the teaching of medicine.

Avoid the exaggeration, and remember this: the public cares little how long we have studied a particular subject, but rather how much we know of it!

Clyde A. Henry, M.D., Farson, Iowa.

The Attempt to Degrade the Sanitary Service at the Isthmus

The following correspondence, which explains itself, is commented on editorially in this issue:

Hon. James R. Mann:

Dear Sir: The attention of the Committee on Medical Legislation of the American Medical Association has been called to H. R. 5155, introduced by you in the House of Representatives, providing for the government of the Canal Zone and the construction of the Panama Canal. An examination of the bill shows that in Section 3, providing for the organization of the canal board, no provision is made for a chief sanitary officer of the same rank as the director, chief engineer and governor. The result of the adoption of the bill in its present form would evidently be the subordination of the sanitary department to the position which it occupied under the first canal board. I am sure that this was not your intention, in view of the great importance of the sanitary department in making the construction of the canal possible. In other words, I am confident that the omission of such a provision is an oversight. I therefore take the liberty of calling your attention to it and shall be glad to learn whether it would not be possible to amend the bill so as to leave the position of the sanitary department unchanged. I shall be very glad to hear from you on this point.

FREDERICK R. GREEN,
Secretary, Committee on Medical Legislation.

HOUSE OF REPRESENTATIVES
COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE

Dr. Frederick R. Green, Chicago:

Dear Sir: Replying to your recent favor, I beg to say that I am not in favor of making a chief sanitary officer on the Canal Zone of the same rank as the chief engineer. It is not possible to have good government on the zone with a lot of different heads, but under the bill which I introduced the President has full authority to continue the Chief Sanitary Officer and give him as much authority as he now has. It would be impossible to carry on the work of the canal without constant friction if your sugestion was incorporated in the law and I trust that you will not push it. Certainly the sanitation of the canal will be cared for and there is no intention to let down on the character of the work now being performed.

JAMES R. MANN, M. C.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CALIFORNIA: Los Angeles, December 7. Sec., Dr. Charles L. Tisdale, Butler Bldg., San Francisco.
DELAWARE: Regular, Dover, December 14; Homeopathic, Wilmington, December 14. Secretary of the Medical Council, Dr. H. W. Briggs, Wilmington.
IOWA: State House, Des Moins, Dec. 7-9. Sec., Dr. L. A. Thomas.
KENTUCKY: The Armory, Louisville, December 14. Sec., Dr. J. N. McCormack, Bowling Green.
MARYLAND: 1211 Cathedral St., Baltimore, December 14-17. Sec., Dr. J. M. Scott, Hagerstown.
PENNSYLVANIA: Regular and Homeopathic, Philadelphia, December 14.17; Eclectic, Harrisburg, December 14-17. Secretary of the *Medical Council*, Nathan C. Schaeffer, Harrisburg.
VIRGINIA: Lynchburg, Dec. 14-17. Sec., Dr. R. S. Martin, Stuart.

The Medical School as a Part of the University

In the annual address in medicine at Yale University, Prof. W. H. Howell (*Science*, July 30, 1909, p. 129) points out the remarkable progress which *has been made* in medical education in this country within the last decade. He, however, calls attention to the fact that by far the greatest progress has been made in the teaching of the medical or biologic sciences. *The time of preparation* for the clinical years has been greatly lengthened and improved, while in the last two, or clinical, years the progress has been comparatively very slow; so slow in fact, that the methods and quality of instruction in these years, in the majority of American medical schools, is very little improved over that given to the former generation.

The explanation of this is probably to be sought in the fact that the clinical men are too often capable practitioners rather than scientific physicians. Too often they are so lacking in an adequate knowledge of laboratory methods and the medical sciences that one is inclined to ask what is the use of giving the student a scientific training if the man who instructs him in diagnosis and treatment neglects to show wherein this knowledge is applicable. Under present conditions so much time and energy are devoted to private practice by the clinical men that original investigation and scientific clinical instruction sadly suffer as a consequence.

As a remedy it is recommended that the clinical professors be paid the full salary of a full professor and be limited in their practice to the University Hospital. Howell thinks that America is at present in a good condition to try such an experiment as well as to carry out the recommendation of the Council on Medical Education of the American Medical Association, that there be added to the present regular course of instruction a year of hospital service as an obligatory part of the requirements for the degree in medicine or for the license to practice medicine.

North Dakota October Report

Dr. H. M. Wheeler, secretary of the North Dakota State Board of Medical Examiners, reports the written examination held at Grand Forks, Oct. 5-7, 1909. The number of subjects examined in was 14; percentage required to pass, 75. The total number of candidates examined was 16, all of whom passed. Twelve reciprocal licenses were issued at this examination. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Bennett Medical College	(1908)	75
Northwestern University Medical School	(1909)	86
University of Iowa, Coll. of Med...(1907) 81;	(1909)	83
University of Louisville	(1909)	87
Harvard Medical School	(1898)	82
Univ. of Minnesota, Coll. of Med. (1903) 83;	(1909) 81,	81
Hamline	(1907)	82
American uis	(1897)	76
Jefferson	(1909) 85,	87
Wisconsin nd Surgeons	(1909)	77
Marquette ..(1903) 76;	(1909)	81

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with.
Northwestern University Medical School	(2, 1909)	Illinois
Coll. of Phys. and Surg., Chicago (1906) (1907)	(1908)	Illinois
University of Michigan	(1907)	Minnesota
Medical School of Maine	(1906)	Maine
University of Minnesota ....(2, 1906)	(1908)	Minnesota
Hamline University	(1908)	Minnesota
Milwaukee Medical College	(1896)	Wisconsin

Utah October Report

Dr. G. F. Harding, secretary of the Utah State Board of Medical Examiners, reports the written examination held at Salt Lake City, October 4-5, 1909. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 5, of whom 3 passed and 2 failed. Seven reciprocal licenses were granted. The following colleges were *represented:*

PASSED

College	Year Grad.
George Washington University	(1909)
Northwestern University Medical School	(1909)
University of Michigan, Homeopathic Department	(1909)

FAILED

Keokuk Medical College	*(1909)*
Tokio Medical College	*(1909)*

LICENSED THROUGH RECIPROCITY

College	Year Grad.	*Reciprocity* with.
University of Colorado	(1907)	Colorado
College of Physicians and Surgeons, Chicago	(1904)	Wisconsin
College of Physicians and Surgeons, Keokuk	(1887)	Iowa
University of Louisville	(1907)	Wisconsin
New York University Medical College	(1890)	Colorado
Jefferson Medical College	(1892)	Colorado
McGill University, Montreal	(1897)	Illinois

Louisiana October Report

Dr. F. A. LaRue, secretary of the Louisiana State *Board* of Medical Examiners, reports the written *examination* held at New Orleans, Oct. 1-2, 1909. The number of *subjects exam*-

ined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 23 of whom 19 passed and 4 failed. One candidate was licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
College of Physicians and Surgeons, Little Rock	(1909)	75.8
University of Arkansas	(1905)	85
Kansas Medical College	(1894)	85.2
Kentucky School of Medicine	(1896)	75
Flint Medical College	(1909)	80, 87.8
Maryland Medical College	(1903)	86.4
University of Nashville	(1908) (1909)	78.6 88.6, 90.6
Memphis Hospital Medical College	(1901) (1908) (1909)	75 76.2; 87.2 76.6, 77, 77, 81.8
Vanderbilt University	(1894)	83.6
University of the South	(1901)	80.4
FAILED		
Louisville Medical College	(1903)	63.4
Memphis Hospital Medical College	(1891) (1908)	29.2 64.4
Meharry Medical College	(1909)	73.6

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with.
Washington University, St. Louis	(1907)	Missouri

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SEMELINCIDENCE

To the Editor:—The suggestion of Dr. T. L. Hazzard (THE JOURNAL A. M. A., Nov. 13, 1909, liii, 1658; Sept. 18, 1909, liii, 963) to adopt the term "semelincident" to designate diseases that do not recur, is a good one. We think largely in words, and if this word with its significance is put clearly before the profession, something may be accomplished to explain practically certain phases of immunity.

As Dr. Hazzard intimates, the word is not entirely new, though apparently not in the dictionaries. My recollection is that I heard it as an undergraduate student, over twenty years ago. At any rate it was familiar to me at least as early as 1902, when it was used in a classification of infections and I have used it in a number of published articles.

The term "immunifacient" is also an excellent one, but of somewhat different meaning, as a number of diseases, such as diphtheria and influenza, are self-limiting, and immunize against themselves for a time. Whether there is an essential difference between the immunities thus produced or whether there is merely a difference in degree, is an important question.

Another interesting problem is with regard to a group of rare diseases of high mortality, such as cerebrospinal fever, equinia, tetanus, anthrax, etc. By the law of chance, a repetition of such a disease would be extremely rare but it is possible that large series might show statistically whether there is really a semelincidence.

A few diseases, like pneumonia, diphtheria and rheumatism, are said to predispose to recurrences but there seems to be some question as to the exact nature of the infection in the first and as to the infectiousness of the last while the predisposition in diphtheria is probably due to a chronic throat lesion.

Certain infections, such as tuberculosis, leprosy, syphilis and the malignant neoplasms, if these be due to micro-organisms, do not tend to spontaneous recovery so that immunization with germ products is not to be expected *a priori*, though one must always yield to the argument of fact. The old idea of "exhaustion of the soil" in the case of semelincident diseases is now commonly ridiculed but it must be admitted that in a crude, practical way, it represents a fact. Indeed, the expression is to be criticized rather from the agricultural than from the bacteriologic side. The modern theory of immunity may, with similar crudity, be interpreted as implying that the semelincident disease, instead of exhausting the soil, adds something to it, which prevents the further growth of a particular kind of germ, vegetable or animal as the case may be, without interfering either with normal physiologic processes or the growth of other germs. When we contemplate the fact that this process of addition or subtraction, may be repeated for half a dozen different diseases for the same individual without any apparent effect on his physiology, we are face to face with a very puzzling problem. *A priori*, "exhaustion of the soil" does not impress me as any more ridiculous than the opposite action and the exact nature of the alteration requires careful study, without reference to the popularity or authority of any hypothesis. A. L. BENEDICT, M.D., Buffalo.

The Public Service

Medical Department of the Army

Changes for the week ended Nov. 20, 1909:

Lyster, Theodore C., major, relieved from duty with the Isthmian Canal Commission, December 22; will proceed to the United States for orders.

Thornburgh, Robert M., capt., order for duty at Army General Hospital, San Francisco, revoked.

Wilson, James S., major, order for duty at Military Prison, Alcatraz Island, Cal., revoked; will proceed at the expiration of his present leave of absence to Fort Ethan Allen, Vt., for duty.

Kendall, William P., major, when relieved at Fort Ethan Allen, Vt., will proceed to Fort Riley, Kan., for duty.

Harris, Jesse R., capt., granted sick leave of absence for 3 months.

Hill, Eben C., 1st lieut., granted sick leave of absence for 21 days.

Lyster, William J. L., major, ordered from San Francisco, to Fort Oglethorpe, Ga., for duty.

Keefer, Frank R., major, granted leave of absence for 1 month, 7 days.

Ewing, Charles B., major, retired from active service, having been found disqualified for promotion.

Howard, Deane C., major, Ekwurzel, George M., capt., Keller, William L., capt., and Richardson, William H., 1st lieut., relieved from duty in Philippines Division; will sail February 15, for San Francisco.

Brown, Ira C., 1st lieut., M. R. C., ordered to proceed at the expiration of his present leave of absence to Fort Lawton, Wash., for duty.

Campbell, George F., 1st lieut., M. R. C., granted leave of absence for 3 months.

Jarrett, Arthur R., 1st lieut., M. R. C., granted leave of absence to December 29.

Norriss, Henry C. R., 1st lieut., M. R. C., ordered to active duty; will proceed to Vancouver Barracks, Wash., for duty.

Maguire, Daniel F., 1st lieut., M. R. C., ordered to active duty; will proceed to Fort Myer, Va., for duty.

Barney, Fred M., 1st lieut., M. R. C., relieved from duty at Fort Myer, Va., and ordered to Fort Clark, Tex., for duty.

Lamb, William R., 1st lieut., M. R. C., resignation accepted, to take effect November 18.

Eliot, Henry W., 1st lieut., M. R. C., relieved from further duty in the Philippines Division, and ordered to proceed at the expiration of his present leave of absence to Fort McKinley, Me., for duty.

Adair, George F., Kennedy, James S., Chase, Alpha M., and de Niedman, William F., 1st lieuts., M. R. C., relieved from duty in their present stations; will proceed February 5 from San Francisco, for Philippine service.

McCallum, Francis M., 1st lieut., M. R. C., relieved from duty at Schofield Barracks, H. T.; will proceed to San Francisco, on transport leaving Manila, P. I., February 15.

Mills, Robert H., dental surgeon, left Fort Riley, Kan., and returned to his proper station, Fort Adams, R. I.

Laflamme, Frank L. K., dental surgeon, arrived at Fort Benjamin Harrison, Ind., for duty.

Scott, Harold O., dental surgeon, ordered to Columbus Barracks, Ohio, for duty, at the expiration of his present leave of absence.

Rhoades, Rex. H., dental surgeon, relieved from duty at Columbus Barracks, Ohio, and ordered to San Francisco, in time to sail February 5 for Philippine service.

Ingalls, Raymond E., dental surgeon, relieved from duty in the Philippines Division, will sail February 15 for San Francisco.

Marshall, John S., E. and S. D. S., granted leave of absence for 3 months, when relieved from Philippine service.

Medical Corps of the Navy

Changes for the week ended Nov. 20, 1909:

Pickrell, G., surgeon, detached from duty in connection with fitting out the *Solace* and ordered to command that vessel when placed in service.

Streets, T. H., medical director, placed on the retired list from Nov. 20, 1909.

Blackwell, E. M., surgeon, detached from the Naval Academy and ordered to duty in connection with fitting out the *Solace*, and to duty on board that vessel when placed in service.

Holcomb, R. C., surgeon, detached from the Naval Hospital, Norfolk, Va., and ordered to duty in connection with fitting out the *Solace*, and to duty on board that vessel when placed in service.

Garton, W. M., surgeon, detailed from the *Ohio* and ordered to the Naval Hospital, Norfolk, Va.

Angeny, G. L., surgeon, ordered to the Naval Recruiting Station, Baltimore.

McDonnold, P. E., P. A. surgeon, detached from the Naval Academy and granted sick leave for 3 months.

Vickery, E. A., P. A. surgeon, detached from the Naval Hospital, Boston, and ordered to duty in connection with fitting out the *Solace*, and to duty on board that vessel when placed in service.

Schmidt, L. M., asst.-surgeon, detached from the Navy Yard, Charleston, S. C., and ordered to duty in connection with fitting out the *Solace*, and to duty on board that vessel when placed in service.

Clark, G. F., asst.-surgeon, detached from the Naval Recruiting Station, Baltimore, and ordered to duty in connection with fitting out the *Solace*, and to duty on board that vessel when placed in service.

Brister, J. M., P. A. surgeon, ordered to the Naval Academy.

Streets, T. H., medical director, detached from duty as a member of the Naval Retiring Board, Washington, D. C., and ordered home to wait orders.

Heiner, R. G., P. A. surgeon, detached from the *Albany* and ordered to the Navy Yard, Mare Island, Cal.

Public Health and Marine-Hospital Service

List of changes for the seven days ended Nov. 17, 1909:

Cobb, J. O., surgeon, granted 1 day's leave of absence, Nov. 11, 1909, on account of sickness.

Wertenbaker, C. P., surgeon, directed to report at the Bureau November 15, 1909, on special temporary duty.

Lavinder, C. H., P. A. surgeon, detailed to represent the Service at the meeting of the Chicago Medical Society, to be held in Chicago, Nov. 24, 1909.

Parker, H. B., P. A. surgeon, directed to report at the Bureau Nov. 19, 1909, on special temporary duty.

Corput, G. M., P. A. surgeon, granted 5 days' leave of absence from Nov. 12, 1909.

Fox, Carroll, P. A. surgeon, granted 10 days' leave of absence en route to station.

Goldberger, Joseph, P. A. surgeon, directed to proceed to Mexico City, Mex., on special temporary duty.

Lloyd, B. J., P. A. surgeon, granted 5 days leave of absence from Oct. 19, 1909.

Francis, Edward, P. A. surgeon, granted 2 days' leave of absence while en route to places mentioned in Department orders of Nov. 9, 1909.

Ebersole, R. E., P. A. surgeon, directed to report to the medical officer in command at San Francisco, for duty and assignment to quarters.

Bryan, Wm. M., asst.-surgeon, granted 30 days' leave of absence from Nov. 27, 1909.

Stiles, Ch. W., chief, Division of Zoology, Hygienic Laboratory, detailed to attend the meeting of the New Jersey Sanitary Association, to be held in Lakewood, N. J., Dec. 3-4, 1909.

Hunt, Reid, chief, Division of Pharmacology, Hygienic Laboratory, detailed to attend the meeting of the Council on Pharmacy and Chemistry of the American Medical Association, to be held in Chicago, Nov. 12-13, 1909.

Bailey, C. A., acting asst.-surgeon, directed to proceed to St. John N. B., on or about Nov. 23, 1909, for medical examination of aliens.

Cheney, E. L., acting asst.-surgeon, granted 21 days' leave of absence from Nov. 16, 1909.

Houghton, M. W., acting asst.-surgeon, granted 5 days' leave of absence from Nov. 18, 1909.

MacCaffry, W. B., acting asst.-surgeon, granted 2 days' leave of absence in October, 1909, under paragraph 210, Service Regulations.

Ransom, S. A., acting asst.-surgeon, granted 30 days' leave of absence from Nov. 11, 1909.

Rodman, J. C., acting asst.-surgeon, granted 5 days' leave of absence from Nov. 17, 1909.

Simonson, G. T., acting asst.-surgeon, granted 2 days' leave of absence from Nov. 16, 1909.

Brinckerhoff, W. R., asst. director, Leprosy Investigation Station, granted 30 days' leave of absence from Dec. 2, 1909.

Wilbert, Martin I., technical asst., Hygienic Laboratory, detailed to attend the meeting of the Council on Pharmacy and Chemistry of the American Medical Association, to be held in Chicago, Nov. 12-13, 1909.

BOARDS CONVENED

Board of medical officers convened to meet at the Marine Hospital, San Francisco, for the purpose of making a physical examination of two officers of the Revenue-Cutter Service. Detail for the board: Surgeon James M. Gassaway, chairman; Assistant Surgeon S. C. Hotchkiss, recorder.

Board of medical officers convened to meet at Astoria, Ore., for the purpose of making a physical examination of an officer of the Revenue-Cutter Service. Detail for the board: Passed Assistant Surgeon J. M. Holt, chairman; Acting Assistant Surgeon Jay Tuttle, recorder.

Board of medical officers convened to meet at the Marine Hospital, Key West, Fla., for the purpose of making a physical examination of an officer of the Revenue-Cutter Service. Detail for the board: Surgeon E. K. Sprague, chairman; Acting Assistant Surgeon S. D. W. Light, recorder.

Health Reports

The following have been reported to the Public Health Service, during the week ended Nov. 19, 1909:

SMALLPOX—UNITED STATES

California: Sacramento, Oct. 17-23, 1 case.
Georgia: Macon, Oct. 30-Nov. 6, 3 cases.
Illinois: Danville, Oct. 30-Nov. 6, 2 cases.
Kansas: Kansas City, Oct. 30-Nov. 6, 1 case.
Kentucky: Lexington, Oct. 24-30, 1 case.
Minnesota: Duluth, Oct. 30-Nov. 6, 1 case.
Mississippi: Holly Springs, Oct. 30-Nov. 6, 3 cases.
Montana: Butte, Oct. 15-21, 7 cases.
Tennessee: Memphis, Oct. 30-Nov. 6, 3 cases.
Texas: Eagle Pass, Oct. 24-30, 3 cases.
Washington: Bellingham, Oct. 24-30, 2 cases.
Wisconsin: La Crosse, Oct. 30-Nov. 6, 1 case; Milwaukee, 6 cases.

SMALLPOX—FOREIGN

[illegible] es, Aug. 1-31, 23 deaths.
[illegible] 27-Oct. 3, 1 death.
[illegible] 9-16, 2 cases.
[illegible] ase.
[illegible] ct. 3-9, 1 death.
[illegible], 58 cases; Naples, 9 cases, 1 death.
[illegible] 19-25, 1 case, in vicinity; Medellin, Oct. 31, 1 case; Orizaba, present; Puebla and present along the lines of railroad, present; Veracruz, Oct. 24-31, 2 cases, 3 deaths.
Persia: Meshed, Sept. 4, present.
Philippine Islands: Iloilo, July 1-Aug. 31, 237 cases, 142 deaths.
Russia: Warsaw, Sept. 12-18, 6 deaths.
Spain: Barcelona, Oct. 19-25, 1 death; Valencia, Oct. 17-23, 1 case; Vigo, present.
Turkey: Bagdad, Sept. 17-25, present; Constantinople, Oct. 18-24, present.

CHOLERA

China: Amoy, Sept. 26-Oct. 9, 65 deaths; Kulangsu, Sept. 26-Oct. 2, 3 deaths; Shanghai, present.
India: Bombay, Oct. 6-12, 3 deaths; Calcutta, Sept. 26-Oct. 2, 8 deaths; Negapatam, Sept. 11-17, 3 deaths.
Java: Batavia, Sept. 26-Oct. 2, 17 cases, 1 death.
Japan: Kyoto, to Oct. 26, 200 cases, 98 deaths; Moji, Oct. 16, 4 cases; Shinkoku (island), Matsuyama, Oct. 20, present; Wakamatsu, Oct. 16, present.
Korea: Epidemic along the Yalu River; Chemulpo, Sept. 28-Oct. 9, present; Pyeng Yang, present; Seoul, Sept. 19-28, 1,072 cases, 651 deaths.
Manchuria: Dalny, Oct. 3-9, 1 case.
Netherlands: Utrecht (province), Jaarsfeld, Oct. 20, 1 case, 1 death.
Philippine Islands: Manila, Sept. 12-Oct. 9, 73 cases, 58 deaths; Provinces, 1,004 cases, 741 deaths.
Russia, general, Oct. 3-10, 570 cases, 254 deaths; St. Petersburg, Oct. 17-22, 116 cases, 35 deaths.

YELLOW FEVER

Ecuador: Guayaquil, Oct. 1-15, 13 cases, 4 deaths.

PLAGUE

British East Africa: Kisumu, July 10-Aug. 24, 12 cases, 12 deaths.
Chile: Antofagasta, Oct. 16, present; Iquique, present; Mejillones, present.
China: Amoy, Sept. 26-Oct. 9, 71 deaths.
Ecuador: Guayaquil, Oct. 1-15, 16 deaths.
India, general, Sept. 26-Oct. 2, 4,377, cases, 3,460 deaths; Bengal, 48 cases, 31 deaths; Bombay, Sept. 22-28, 24 deaths, present; Calcutta, Sept. 26-Oct. 2, 11 deaths; Rangoon, 5 deaths.
Japan: Kobe, Oct. 3-16, 28 cases, 21 deaths, present; Shinkoku (island), Kochi, Oct. 20, present; Matsuyama, present.

Marriages

Emil Amberg, M.D., to Miss Cecile Siegel, both of Detroit, Mich., November 16.

Albert I. Civins, M.D., to Miss Bertha Zeupnyik, both of Cleveland, Ohio, October 19.

Arthur Edison Gammage, M.D., Chicago, to Miss Myra Gillis of Rio, Ill., November 4.

John J. C. Ross, M.D., to Miss Belle Ratcliffe, both of Bloomington, Ind., November 4.

Julius Arthur Toren, M.D., McCook, Neb., to Miss Ethel Ida Midgeley at Chicago, October 27.

Harry C. Weber, M.D., Louisville, Ky., to Miss Edna E. Hill of Memphis, Tenn., November 4.

Harry Stuckert, M.D., Doylestown, Pa., to Miss Lilian Radcliff of Philadelphia, November 10.

Wilfred Hueston, M.D., Nashwauk, Minn., to Miss Florence Weber of Milwaukee, Wis., recently.

Louis C. Lehr, M.D., Washington, D. C., to Miss Sallie Howard Conrad, at Baltimore, November 9.

Dayton C. Wiggin, M.R.C., U. S. Army, to Miss Marion V. Williamson of Washington, D. C., November 10.

Harold Blake Justice, M.D., Sapulpa, Okla., to Miss Shirley Louise Mouck of Morrison, Ill., November 7.

Frederick W. Shaw, M.D., Kansas City, Kan., to Miss Elizabeth Martin of National Military Home, Kan., November 10.

Deaths

James Wharton McLaughlin, M.D. Tulane University, New Orleans, 1867; a member of the American Medical Association; formerly president of the Southern Medical Association, State Medical Association of Texas, Austin District and Travis County medical societies, and the Texas Academy of Science; from 1897 to 1905, professor of medicine in the University of Texas, Galveston; and a member of the medical staff of the John Sealy Hospital; in 1907 appointed a member of the board of regents of the State University; a Confederate veteran; died at his home in Austin, November 13, aged 69.

George Seymour, M.D. New York University, New York City, 1865; a member of the Medical Society of the State of New York; for seven years a member of the Utica Board of Health; acting assistant surgeon in the army during the Civil War; a member of the staff of St. Elizabeth's, Faxton, and St. Luke's hospitals, Utica; one of the incorporators of the Utica Medical Library Association; died at his home, November 8, aged 70. The Utica Medical Library Association and the Oneida County Medical Society attended the funeral in a body.

John R. Moore, M.D. Chicago Medical College, 1873; a member of the American Medical Association; chief surgeon of the United States Steel Corporation's Lake Superior mines, local surgeon for the Chicago and Northwestern Railroad and a member of the surgical staff of the Ironwood, Mich., Hospital; was accidentally shot and seriously injured at his camp on Clark Lake, near Ironwood, November 7, and died at the Ironwood Hospital, November 13, as a result of his wounds, aged 59.

Charles Albert Palmer, M.D. Northwestern University Medical School, Chicago, 1876; a member of the American Medical Association; for seven years a member of the board of education of Princeton, Ill.; and for ten years a trustee of the township high school; twice mayor of Princeton; for a time president of the board of health; and a member of the local pension board; died at his home in Princeton, November 6, from pernicious anemia, aged 54.

John Jay Hardin Conner, M.D. University of Michigan, Ann Arbor, 1877; a member of the American Medical Association; surgeon of the Springside Coal Mining Company and Pana (Ill.) Coal Mining Company; secretary of the local pension board; formerly president of the District Medical Society of Central Illinois, and ex-secretary of the Pana Board of Health; died at his home November 10, from acute endocarditis, aged 60.

Morgan L. Bacon, M.D. Long Island College Hospital, Brooklyn, N. Y., 1872; a veteran of the Civil War; local surgeon of the Fall Brook Railroad Company; for thirteen years school director of Wellsboro, Pa.; a member of the local pension board, and health officer; died at his home in that place, November 2, aged 72.

Samuel Sherwell Carter, M.D. Long Island College Hospital, Brooklyn, N. Y., 1895; a member of the Medical Society of the State of New York; formerly a practitioner, and president of the board of health of Haverstraw, N. Y.; died suddenly in Bartlesville, Okla., where he was visiting, October 28.

Henry H. Setser, M.D. University of Louisville, Ky., 1875; formerly a member of the Indiana State Medical Association; president of the Leavenworth (Ind.) board of health, and formerly secretary of the Crawford county board of health; died at his home in Leavenworth, November 11, aged 57.

Henry Leander Bacon, M.D. Rush Medical College, Chicago, 1894; of New London, Wis.; a member of the State Medical Society of Wisconsin; a member of the local pension board, and school board; was accidentally shot and killed while deer-hunting near Rhinelander, November 8, aged 40.

Alexander R. Stephens, M.D. College of Physicians and Surgeons, Ont.; for fifty-seven years a practitioner of Collingwood, Ont.; formerly president of the Simcoe District Medical Society; died at his home Nov. 27, 1908, from senile debility, aged 84.

Hubert L. Gill, M.D. Southern Medical College, Atlanta, 1892; of Columbus, Ga.; formerly assistant to the chair of surgery in Atlanta Medical College; died suddenly at the home of his sister in Atlanta, Ga., November 11, from heart disease, aged 40.

Charles Kimball Cutter, M.D. Harvard Medical School, Boston, 1876; a member of the American Medical Association; died suddenly while prescribing for a patient in his office in Somerville, Mass., November 11, from valvular heart disease, aged 58.

William Adie Bell, M.D. College of Physicians and Surgeons, New York City, 1887; a member of the Medical Society of the State of New York; of Yonkers; died suddenly while making a professional call, November 15, from heart disease, aged 56.

Henry Martyn Northam, M.D. University of Michigan, Homeopathic College, Ann Arbor, 1893; formerly of New Middletown, Ohio; died at his home in Ann Arbor, Mich., October 31, from cerebral hemorrhage, aged 51.

Robert James Harvey, M.D. Kansas City, Mo., Medical College, 1900; Northwestern University Medical School, Chicago, 1901; of Aguilar, Colo.; died in Lamar, N. M., Aug. 10, 1908, from pulmonary tuberculosis, aged 29.

Delevan E. Blackman, M.D. University of Buffalo, N. Y., 1878; for several years a member of the attending staff of the Buffalo General Hospital; died at his home in that city, November 11, from bronchopneumonia.

Harriette C. Keatinge, M.D. New York Medical College and Hospital for Women, 1879; a pioneer woman practitioner of New Orleans; died at her home in New York City, November 11, from heart disease.

Silas Pinckney Owens, M.D. St. Louis College of Physicians and Surgeons, 1885; president of the pension board of Moberly, Mo.; died at his home in that city, November 2, from cerebral hemorrhage, aged 53.

Isaac R. Whitaker, M.D. Tulane University, New Orleans, 1858; commander of Whitaker's Scouts, C. S. A., during the Civil War; died at his home in Utica, Miss., November 6, from malarial fever, aged 75.

Samuel Thomas Howell, M.D. Jefferson Medical College, Philadelphia, 1871; a Confederate veteran; died at his home in Eden Park, Independence, Mo., July 4, from cancer of the stomach, aged 66.

Charles Carrow Thompson, M.D. Kentucky School of Medicine, Louisville, 1872; Baltimore Medical College, 1892; died at his home in Taylorville, Ill., November 4, from multiple neuritis, aged 60.

Byron B. Pettitt, M.D. American Eclectic Medical College, Cincinnati, 1893; of Oklahoma City, Okla.; died in Fort Worth, Texas, January 27, from burns received in a fire in a hotel, aged 56.

Allen Perry Johnston, M.D. Rush Medical College, Chicago, 1906; of Chicago; formerly an interne in the Chicago Policlinic Hospital; died in that institution, February 10, from pneumonia, aged 32.

Josephine Cunin, M.D. Bishops College, Montreal, 1895; L.R.C.P. and S., Edinburgh, 1895; formerly of Montreal; died at her home in St. Margaret's Bay, Jamaica, October 24, aged 48.

Albert M. Pherson, M.D. Miami Medical College, Cincinnati, 1876; a member of the American Medical Association; died at his home in Osborn, Ohio, October 7, from angina pectoris, aged 62.

Eden E. Rhodes, M.D. Medical College of Indiana, Indianapolis, 1886; a member of the Indiana State Medical Association; died at his home in Rochester, November 7, from pneumonia, aged 52.

George R. Hazlewood, M.D. Medical College of Indiana, Indianapolis, 1880; died at his home in English, Ind., November 10.

William Ferdinand Friedhofer, M.D. Cooper Medical College, San Francisco, 1893; died at his home in San Francisco, Nov. 29, 1908, from myocarditis and interstitial nephritis, aged 45.

Frank Edwin Card, M.D. University of Vermont, Burlington, 1889; formerly of North Adams, Mass.; died at his home in Providence, R. I., November 7, from pneumonia, aged 43.

Edward Allworth, M.D. Victoria College, Cobourg, Ont., 1861; one of the oldest practitioners of Essex county, Ont.; died at his home in Kingsville, November 9, aged 73.

Rolla C. Grant, M.D. New York Homeopathic Medical College, New York City, 1879; died at his home in Rochester, N. Y., November 8, from angina pectoris, aged 65.

James Davidson, M.D. University of Minnesota, Minneapolis, 1892; formerly of Duluth; died at his home in Salt Lake City, Utah, November 9, from asthma, aged 48.

William Van Bergen Ames (license, Ohio, 1896); for sixty-four years a practitioner; died at his home in Fremont, Ohio, November 6, from senile debility, aged 88.

Charles Edwin Hall, M.D. New York University, New York City, 1873; died at his home in Greenville, N. H., November 7, from cerebral hemorrhage, aged 61.

Otis Shields Sharp, M.D. Cincinnati College of Medicine and Surgery, 1884; died at his home in Dayton, Pa., October 21, from pneumonia, aged 49.

John Christofer Nahrung, M.D. Independent Medical College, Chicago, 1897; died at his home in Smithton, Mo., August 20, from nephritis, aged 79.

John T. Cox, M.D. Miami Medical College, Cincinnati, 1870; Confederate veteran; died at his home in Moberly, Mo., November 11, aged 70.

Theodore Koch, M.D. University of Berlin, Germany, 1852; died at his home in Baraboo, Wis., November 19, from heart disease, aged 81.

Addison Hawkins, M.D. Rush Medical College, Chicago, 1879; died at his home in Denver, Colo., November 8, from heart disease, aged 61.

George Morgan Clarke, M.D. Rush Medical College, Chicago, 1903; died at his home in Los Angeles, November 11, from pneumonia, aged 33.

Amy T. Mace, M.D. Harvey Medical College, Chicago, 1897; died at her home in Chicago, Oct. 15, 1908, from splenic leukemia, aged 59.

Z. Corwin Dixon (license, Ind., 1902); died at his home in Linton, Ind., November 10, from congestion of the liver, aged 54.

Nicholas G. Thomas, M.D. Washington University, Baltimore, 1868; died at his home in Apison, Tenn., November 8, aged 63.

Collins E. Ellis, M.D. University of Louisville, Ky., 1881; died at his home in Kansas City, Mo., November 7, aged 52.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

The American Medical Association, Its Work and Its Enemies

The following is taken from the November issue of the *Ohio State Medical Journal*, from the department of "Medical Economics," edited by Dr. J. W. Clemmer:

"The Ohio delegation in the House of Delegates of the American Medical Association at the June session endorsed its policy and activities as published in the proceedings. The work of the nineteen committees, of the Board of Trustees, and of the executive department, as shown by their reports, carried on in the several branches affecting the interests of the profession, displayed untiring zeal and a business capacity unsurpassed by any other great corporation. The volume of business in organization work and in scientific attainments under the management of the House of Delegates requires and exhibits the tact and talent equal to those of any other national organization or a great railway system. Any one who will study the history of the Association in an impartial manner will find that the prosperity attending the present policy and management since 1902 is unequalled by any other great system or organization.

"Of the one hundred and fifty members of the House of Delegates, many of whom have given special and continuous attention to the interests of the Association, not one withheld his endorsement of the work of the Board of Trustees in its management of the business affairs."

"There is a reason for these endorsements. The property and publishing plant are managed in a manner to best meet the demands of a great and growing association. The Journal of the Association has no equal. The list of publications is constantly growing: The *Archives of Internal Medicine*, the National Directory, bi-monthly bulletins, a digest of new remedies, besides an increasing collection of data of interest to state boards, medical societies, colleges, legislative committees and the profession in general. The facilities have been amplified every few years. It was found necessary this year to increase the capacity of the publishing plant by a large appropriation for a new building.

"All this is in the happy contrast with non-progressive methods prior to the reorganization of the association. Membership has been doubled. The combined strength of component state associations is 67,362. The profession has been organized into an active, efficient body. It has learned its duties and its rights.

"Through the councils of the Association it has been safeguarded against the frauds and imposition of trades people. The profession has become a factor in matters of politics and sociology. Its influence is felt in state and national legislation. The medical interests of the people are made an essential factor in professional organization.

"The work of the national Association has been directed along many channels. Note the progress in medical education by improvements forced on medical colleges; note the public instruction on medical subjects by publication and a special lecturer; note the splendid work of the Council on Pharmacy and Chemistry, a work of far-reaching importance to both the profession and the laity; note the benefits that accrue to the efforts being directed to such subjects as patents and trade marks, regulation of membership in component societies, drug reform, defense of medical research, elaboration of ethical principles, etc.

"One of the most important labors conducted by the American Medical Association, that of national legislation for the public health defense, is altruistic, pure and simple, and under the leadership of our own Dr. Charles A. L. Reed. The character of this work is exampled by his activities and address before the National Association of State Food and Dairy Commissioners at its St. Louis meeting. He stood like a stone wall on the benzoate of soda question, in defense of our parent organization and the public, against the brazen coalition of manufacturing and political interests.

"In brief, all the officers and committees, bureaus and councils representing the government of the American Medical Association are accomplishing a stupendous work for the good of American medicine. The published transactions of the House of Delegates are convincing of the scientific worth and moral integrity of this work.

"The opposition of charlatans, healers and moneyed interests naturally attends the labor of the American Medical Association in the advancement of professional and public health interests." "It is to be expected that the American Medical Association will always have its enemies in and out of the profession. It is also expected that members of the organized profession will show their alliance and their allegiance to the parent organization. Members of other organizations are loyal to the principles and precepts of official regulation. Representation of component societies is provided to correct misrule. Any county society has an influence in the governing body of the American Medical Association. Each state association is represented by chosen delegates. These are the sources of our strength (or weakness) as a national organization. Progress or failure is compassed by the authority vested in state representation. Reformation of 'despotism' must issue from the same authority.

"Any one from the housetops of the profession may do much to create misunderstanding and confusion among the rank and file of a large membership. The question with the profession is whether it will give ear to such representation or trust its selected delegates. The component state associations should hold their delegates in the national body responsible for the government of that body. If definite results or changes are desired in the affairs of the American Medical Association the state association should so instruct its delegates. The recommendations for such changes would imply a careful study of the entire subject. Unbiased investigation, however rigid, can only result in good. Any suggestions for improvement of the national association which the present management or the House of Delegates may have overlooked, its members would gladly consider. On the other hand this body could not consider the grievances and complaints put in motion by any insurgents.

"The support of the American Medical Association by its large membership, if loyal to its best interests and continued progress, must adopt constructive and not destructive means. The national association will continue to be what representatives of component organizations make it and not what its enemies are striving to make it. Progress of American medicine as represented by the American Medical Association in the future as in the past, will be an index to its work. It needs no defense; it simply needs to be understood."

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Fourth Month—First Weekly Meeting

GENERAL SUBJECT FOR THE MONTH: INFLAMMATIONS AND INFECTIONS OF THE UTERUS AND APPENDAGES

Anatomy

Uterus: Form, size, position, important relations. Ligaments, broad, round, uterosacral. Structure, cervix, body, serous, muscular and mucous coats. Attachments of vagina to cervix. Arteries and veins, nerves. Lymphatics.

Fallopian Tube: Position, portions, structure, blood supply. Broad ligament, structure, relations, contents.

Ovary: Shape, size, position, relations, ligaments. Structure, functions. Blood and nerve supply, lymphatics.

INFLAMMATIONS OF THE UTERUS

Acute Metritis

Classification of Metritis: (a) Etiological, parturition, trauma, bacteria, etc.; (b) pathological, catarrhal, suppurative, granular, ulcerative; (c) anatomical, endometritis, myometritis, parametritis, perimetritis.

Etiology of Acute Metritis: Predisposing causes, menstrual congestion and suppression, displacement, trauma, parturition, etc. Exciting causes, gonococcus, staphylococcus, streptococcus, etc. Secondary to vaginitis, etc.

Pathology: Gross changes in uterus, changes in mucous, muscular and peritoneal coats, in lymph channels and bloodvessels. Variations in intensity of infection, extension to surrounding structures.

Symptoms: Temperature, pain, painful urination and defecation, amenorrhea, leucorrhea, enlarged tender uterus, etc.

Treatment: Palliative, rest in bed, anodynes, douches. Expectant indications. Surgical indications and technic for curettage, for vaginal section.

REFERENCE BOOKS FOR THE MONTH

Dudley: Principles and Practice of Gynecology.
Ashton: Practice of Gynecology.
Montgomery: Practical Gynecology.
Reed: Text-book of Gynecology.
Webster: Diseases of Women.
American Text-book of Gynecology.

Society Proceedings

COMING MEETINGS

American Physiological Society, Washington, D. C., December 28-30.
Southern Surg. & Gynecological Assn., Hot Springs, Va., Dec. 20-21.

AMERICAN PUBLIC HEALTH ASSOCIATION

Thirty-seventh Annual Meeting, held at Richmond, Va., Oct. 19-22, 1909

(Concluded from page 1762)

Teaching Hygiene in Elementary Schools

MISS ISABELLE F. HYAM, Dorchester, Mass.: The state has taken on itself the education of the children, and it seems reasonable that as much attention should be given to the child's body as to its mind. Children can rarely change their own environment, but in many ways they can control their lives in an effort at better living, if they are properly prepared. The school-house and school-room should be examples of cleanliness, and afford every means to help the child to live. It would seem hopeless to teach hygiene when the child has but to look about and see filth. The child is the center of his little world, and is most closely concerned with the home. The facts in the home are care of the home, furniture, food and its preparation, hygienic clothing and personal hygiene. The first lesson in ventilation is that there must be an outlet for the foul air at the top of the room, which can be illustrated and emphasized in a cardboard of block house. Scientific impersonation plays a large part in the education of the child. For some children who are physically unfit only the open-air school is proper. They learn to love the open air, and the benefits of such a school are obvious. Health is fundamental and in the school the child should be trained in habits of health. In order to accomplish this end conditions in the school-room must be wholesome. The school should be well-lighted and the air fresh. There should be time for play out of doors and facilities for bathing.

School Instruction in Hygiene and Sanitation

DR. JOHN W. RICHIE, Williamsburg, Va.: I shall refer only briefly to hygiene, limiting the scope of my remarks to the public school, between the fifth grade and the high school. The teaching of sanitation has proved a great success because it is made so simple that it can be taught to pupils below the high-school age. We force the pupil to examine everything and state the conclusions to be drawn from the evidence, and when the pupil accepts as facts what his own reason tells him is true, this is called the open-mindedness of youth. Much good can be done by teaching the facts as to a few specific diseases. Pupils need to be taught about the microscope, and plants and animals that grow in the body and cause disease. They need to be taught something of the defense of the body against germs in order that it may not seem a monstrous thing to put matter from a cow into the human body. They must be made to understand that food and fresh air are more important than "patent medicine." My experience has been that it is a perfectly simple matter to give the theoretical background to children, and he who would shorten the subject by omitting the simple remedy is in danger of breaking the circuit altogether. Everywhere we find intelligent people who believe in sanitation, but even among those people there is ignorance of the simplest principles of bacteriology. They seem to have no idea of what a real disease germ is, but burden themselves with useless precautions. For instance, they filter the water from the roof to free it of typhoid fever germs, overlooking entirely the closet in the back yard. The subject of sanitation should be allowed sufficient time to give pupils some understanding of the subject, and the pupils should be liberally supplied with printed matter for study. Bulletins should be sent to the teachers as well as to the pupils. This teaching has a decided effect in educating the parents as well as the children. The public drinking cup disappears quickly where sanitation is taught. The old hygiene was not practicable, but the new hygiene is practicable, and we should see to it that in teaching hygiene the conditions should be hygienic in the school-room.

The Way to Study Hygiene in the Normal Schools

DR. ADRIAN DE GARAY, Mexico City: The difficulty in this matter has always been as to the manner and form in which such knowledge is promulgated. It is necessary to give the best instruction to all the world, but above all in the primary schools. It is in a condition of health that the citizen becomes of value to the country. There should be two courses of hygiene, one general and the other special, each taught with thoroughness. We should try to make hygiene as well as other studies as practical and interesting as possible. Practical instruction can be given in three ways, the chemical and bacteriologic laboratories, by excursions and study in such places as theaters, water-supply houses, public buildings, etc., and by hygienic amusements. Hygiene should be one of the principal subjects taught in normal schools; it should be studied during the last part of the term; instruction should be given in an entirely practical and agreeable manner, laboratories established and hygienic trips organized.

Instruction in Personal and Public Hygiene in the Medical College

DR. F. F. WESBROOK, Minneapolis: Those in public health work are hard on the doctor, although we realize his difficulties, and we recognize that he has perhaps been the leading spirit in all the advances of hygiene. I am a teacher, and not a practitioner, yet I wish to pay my tribute of respect to the medical profession, which, through the American Medical Association, is doing its best to raise the standard of the profession by seeing that none may enter who are not well prepared. It is the desire to prepare the medical man to regulate matters, in conjunction with other forces with which he will come in contact, very much more than he has done in the past. While we do not expect to make them all medical hygienists, we do expect to prepare them to work with such forces as we have represented here.

Results of Federal Control of Viruses, Serums, Toxins and Analogous Products

DR. JOHN F. ANDERSON, Washington, D. C.: The results of Federal control have been: (1) Manufacturers have been required to put their barns, stables and laboratories into sanitary condition. (2) There has been complete separation of tetanus and tuberculosis work from the work of producing diphtheria antitoxin. (3) All establishments are required to be equipped with proper laboratory facilities. (4) Each lot of virus is required to be examined bacteriologically, and a special test made for tetanus bacilli, and detailed records kept of such examination. (5) The sale of the old style "dry" lymph points is no longer allowed. (6) All animals used for propagation of vaccine virus are required to be autopsied, and if the animal has been suffering from an incurable disease the virus is not allowed to be sold. (7) All serums are required to be examined where standards have been established for toxic contamination, and correctly labeled, and to state the date beyond which they cannot be expected to yield their specific effects, and to contain no excessive amount of preservatives. (8) Standards for diphtheria and tetanus antitoxins have been established.

How an Enlarged and Uniform National Health Administration May be Secured

DR. JOSEPH Y. PORTER, Key West, Fla.: The phantom of offended dignity has often arisen in the past to arouse suspicion of improper interference when the Federal government, through interstate commerce, has stopped to interpose authority, even in an advisory manner in the management of public health matters. This is true to-day, particularly in Massachusetts, Ohio and Illinois, in reference to sanitary matters, and the control of disease-producing conditions within their confines. By advocating an enlargement of the powers of the general government in health control throughout the country which shall be uniform and impartially administered in all sections of the country, it is not herein desired that the arguments advanced or the opinions expressed shall be understood as recommending or advising that the health police powers of a state shall be abridged or superseded by the general government, but rather that some of the difficulties in the present system of administration may be remedied and the awkwardness of many existing conditions corrected.

Tuberculosis from a Maritime Prophylactic Point of View

DR. ANTONIO MATIENZO, Mexico City: Having demonstrated that tuberculosis is a social danger, and that it finds at sea excellent conditions for the breeding of the germ which propogates it, I would propose that an office for medical inspection be established in the principal ports under the control of the sanitary authorities, fully authorized to examine every passenger, and to require steamship companies to establish in all their ships a special department with berths for tuberculous children. The infection of the air having been proved, this is all which should occupy the attention of the hygienist. All people should be prevented from expectorating on the floor and in the berths, and for all tuberculous passengers there should be placed some concise precepts in the room relating to the danger of expectoration to the patient himself as well as to every one else.

What May be Done to Improve the Hygiene of the City Dweller

DR. S. A. KNOPF, New York City: It is by thorough training of ourselves as physicists and sanitarians, the awakening of statesmen and philanthropists to their duties regarding public health and public welfare, the education of employer and employees, of the men and women of all classes of society, in general and personal education of the child at school and the practical application of the combined knowledge and experience gained in modern society, pedagogy and medicine that we may hope to make of the child of to-day the citizen of to-morrow, the ideal man or women, strong, healthy and vigorous, noble and even beautiful to behold. The general hygiene, which concerns all classes alike is that part for which federal, state or municipal health authorities, through their agents or officers, must be held responsible. There should be a more thorough method of cleansing glasses and spoons at soda fountains, and the placing of cuspidors where they can be used. The leather straps in the street cars should be replaced by celluloid straps. The average child should not be sent to school before eight or nine years of age and every city should have an abundance of outdoor playgrounds. Thousands of acres of roofs should be utilized for this purpose. Botanical excursions should be indulged in and respiratory exercises carried on. There is a great race suicide among the poor of New York City inasmuch as many of the children either die young or fill the schools in an undeveloped and unfit physical condition.

Prophylaxis in Exanthematic Typhus

DR. GENARO ESCALONA, Mexico: In the central table land of the Mexican Republic typhus assumes an endemic form; the mortality reaches a very high figure. The physicians of Mexico agree that Mexican typhus presents certain characteristics that are different from the European type. The disease does not have a sudden development. There is a period of ascension and descension through irregular manifestations. Three important points may be considered: (a) The sanitation of the town; (b) the disinfection of the premises occupied by the patient; (c) the disposal of articles coming in contact with the patient. The patient should be isolated and his bed-clothing disinfected by boiling or destroyed by fire. All toilet utensils should be well disinfected and the excreta should be carried off through the drain by an abundant amount of water. The skin should be bathed and the hair cut, as well as the mucous membrane disinfected.

Transmission of Syphilis by Vaccine

DR. FRANCISCO DE BERNALDEZ, Mexico City: The Jenner or arm-to-arm vaccination against smallpox has been discredited by almost all nations because of the possibility of syphilitic inoculation. We are now well aware that in order that this may take place it is necessary to have well-studied conditions, but much care must be used in collecting the lymph. From observations already made, it is stated that the lymph must be taken from persons over three years of age, that being the age at which hereditary syphilis makes itself apparent. The vaccine pustules must be of seven days' growth because the contagious infiltrations have a longer period of incubation. The transmission of syphilis through the agency of humanized vaccine can easily be avoided if we know the conditions under which such transmission is possible. The Jennerian vaccine is to be recommended because it confers a greater degree of and a more lasting immunity.

Report on Yellow Fever in the Mexican Republic from August 25, 1908, to Date

DR. EDOUARDO LICIAGA, Mexico City, Mexico. This is my sixteenth annual report as to the presence of yellow fever in Mexico. There are a number of isloated cases in different parts of the country. In Cuba native children are supposed to contract yellow fever in a mild form, and thus infect mosquitoes, thereby giving rise to isolated cases of yellow fever. The covering with oil of standing water, filling up holes, fumigation of dwelling houses and surveillance of railway passengers constitute some of the means at present employed in fighting this disease. In the ports of Coatzacoalcos, on the Gulf Coast, and Salina Cruz, on the Pacific, it is nearly four years since a single case of yellow fever has been observed.

Necessity of Isolating Syphilitic Prostitutes to Prevent the Propagation of the Disease

DR. JOAQUIN HUICI, Mexico City: The prophylaxis of syphilis is a serious and interesting question, and has given rise to a division among scientific men. This disease has caused more ravages in the human race than any other transmissible disease, not only rendering the individual useless for work, but endangering those with whom he comes in contact. A uniform set of regulations to control prostitutes should be adopted. Governments are under obligation to enact provisions tending to prevent the transmission of disease, and syphilis and gonorrhea being continually transmitted, should be included in that obligation, as public women are the principal sources of those diseases, and they are the ones to whom such provisions should be applied

Efficient Means of Checking Syphilitic and Gonorrheal Contamination

DR. JUAN BRENA, Zacatecas, Mexico: The efforts of an association like this would be fruitless without the cooperation of the social classes. In the effort for the extermination of leprosy and tuberculosis the people join spontaneously, but this is not true with reference to venereal disease. Fortunately, the conviction has grown as to the practical utility resulting from giving universal publicity to clear rules establishing the conditions which render immune communications between the healthy and venereal subjects. Pupils in schools are taught the evils resulting from the use of tobacco and alcohol, and it would be a meritorious work to instruct the older pupils regarding the deadly action of impure pleasures. Literature should be distributed explaining the gravity of these diseases, and the means of prevention. Municipal physicians and others appointed for the purpose should attend these patients free of charge and lectures on the subject should be provided for.

Scope of Public Hygiene in the Betterment of the Home Life in Towns and Cities

MR. ROBERT W. BRUERE, New York City: Every one seems to take it for granted not only that disease is curable, but that it is the business of the medical profession to cure it or to prevent it. It has been many years since the medical profession was regarded as a dispenser of medicine, and not as a preventer of disease, more particularly social disease. Last year there were 10,147 deaths from tuberculosis in New York, and about the same number the year before. The death-rate from other diseases has greatly decreased during the past seven years in New York, but this has not been the case with tuberculosis. Last year one association had charge of 4,000 infants, and everything was done that was possible by simple education and the teaching of hygiene to reduce mortality. The great difficulty encountered was that the mothers were not able to purchase the food that those children required; 10 per cent. of them were forced to earn wages away from home, and over 73 per cent. of the mothers belonged to families where the income was less than $15 a week. That is $300 or $400 less than the Committee on Standard of Living maintains is necessary for the average family. The medical profession has done much to teach the world that disease can be successfully prevented only when it is attacked by an organized community, but I believe that the death rate cannot be cut below 10 per cent. until the problem of the poverty of the worker is attacked.

Scope of Public Health in the Prevention of Dependency

MR. HOMER FOLKS, New York City: Public health work includes both the education of the individual and the community, and if the work could be carried on comprehensively, efficiently and adequately the number of dependents would be greatly reduced. Ill health is a prolific cause of poverty, whether due to individual or social causes. The first strong movement in New York for the prevention of tuberculosis was organized by a society concerned with the relief of the poor. Much remains to be done in the prevention of typhoid, while diphtheria, whooping-cough and scarlet fever are gradually being brought under control. We shall not make prominent headway against alcoholism until we have the support of public health authorities. The movement for the prevention of venereal diseases, from which the public-health authorities cannot much longer hold aloof, must ultimately result in a great lessening of the demand on our hospitals, institutions for children, institutions for the blind and insane asylums.

Sanitary Requirements of Ventilation

DR. W. A. EVANS, Chicago: Good air is the most important problem before health departments. Ten thousand deaths a year from bad meat, bad water or bad milk would produce a world-wide scandal, yet we accept 10,000 deaths from bad air with complacency. The following are the basic sanitary principles of ventilation: 1. Attention must be concentrated on the habitual zones of a room, meaning a space from 4 feet above the floor to 6½ feet above. 2. Dead zones and corner eddies must be encouraged as settling places for bacteria. Such spaces must be cleaned daily with moist methods. 3. The breathing zone must be occupied by an even-up current of air, moving at the rate of at least 60 feet a minute from multiple floor inlets to multiple floor outlets. The temperature of the air reaching the breathing zone should never be higher than 80° F. and is better if it is under 70°. 4. The ventilating air should never enter the room at more than 40 degrees below body temperature. 5. Air ducts must be short. 6. No particular attention should be paid to humidity. 7. The volume of air per quiet person per hour should be five hundred feet. 8. Under no circumstances should the windows be fixed, but a gale of wind should be allowed to blow through each twenty-four hours.

Ventilation of Industrial Establishments

DR. C. T. GRAHAM ROGERS, New York City: The Department of Labor of the State of New York has done much toward the betterment of public health in that state, besides which the Commissioner of Labor has sent a representative of the department to participate in this meeting. Some 430 separate air tests were made during six months of the fiscal year 1908, and a complete tabulation of the results may be found in the Eighth Annual Report of the Commissioner of Labor. Great strides have been made in improving the ventilation of schools and dwellings, but comparatively little progress has been made with the factories. It is to be hoped that some means will be secured to impress the laity with the importance of the subject. Inspections have been made of the New York bakeries, potteries, polishing and buffing rooms, tailor shops, cigar factories, clothing shops, jewelry stores, department stores and others. The cry in the past has been for more light, but now it is for more air. We need both, increasing the resistance of the body to disease, and making the nation stronger physically, mentally and morally.

Cooperative Efforts in Supervision and Control of Milk Supply

DR. F. D. BELL, New York City: The Board of Health of New York City requires a permit from every milk dealer in the city, and if the dealer does not conduct his business in accordance with the requirements he is brought into court. The average milk dealer knows little about the chemistry or bacteriology of milk, and an absolutely sterile milk is almost impossible to obtain because the public is not sufficiently educated to exact this quality of milk. The public is unwilling to pay for such a grade of milk, and the dealer and the average producer are not of a type capable of producing this quality. The average dairy farm is too small to produce milk economically and the dealers are unable to afford any systematic laboratory supervision, or proper buildings and apparatus which we have come to believe are necessary for the production of pure milk. Regulations have been promulgated with the health authorities which, if rigidly enforced, would mean that the towns would be without any milk supply at all. The dealer and health officer should consider themselves friends, and such a feeling can be brought about only by the gradual process of developing mutual confidence.

An Investigation of the Extent of the Bacterial Pollution of the Atmosphere by Mouth Spray

MR. C. E. A. WINSLOW, Brookline, Mass.: With the progress of exact knowledge sanitarians have been led to place less and less emphasis on the part played by the atmosphere in the spread of zymotic disease. It has been shown that quietly inspired air is germ free and most of the particles in the mouth spray are rather coarse and settle rapidly. It is not intended to minimize the real danger from mouth spray, as large numbers of bacilli are discharged in coughing by consumptive patients. Ziesche found in one case 20,000 tubercle bacilli on a glass plate of fifty square inches in area when exposed for half an hour from 16 to 32 inches in front of the mouth of a tuberculous patient. In workrooms, offices and such places the space between the heads of the workers should be at least three feet. This furnishes no basis for a belief that tuberculosis or any other disease is contracted to an appreciable extent through the inspired air, as the spray quickly settles and the conviction is not generally gaining ground that aërial infection of any sort is a minor factor in the spread of zymotic disease.

Sex Problems in Industrial Hygiene

MRS. FLORENCE KELLEY, New York City: It is more than one hundred years since the working people of England first began in the name of public health to get a shorter day for women. In 1847 a bill was passed in England limiting woman's labor to ten hours, but in 1895 in the enlightened state of Illinois, the Supreme Court held that it was unconstitutional to grant to women the same degree of protection. In the majority of our states it is lawful to require women to work in a factory or laundry or store any number of hours that a rush order may require. Our legal procedure is very curious. The Supreme Court is presumed to know only those items of common knowledge specifically laid before it, and it was necessary to collect some 162 pages of common knowledge. For some time there was a law in New York that girls should not work in the stores after 10 o'clock, but it was not enforced because of the claim that there were more important matters to look after. Failure to enforce this law proved in some cases just as fatal as strychnin. About twelve years ago the miners of Utah secured an eight-hour day because they worked underground, but the bakers of New York, who also work underground, failed in their efforts.

Relation of Life Insurance to Public Hygiene

Dr. Lee Frankel, Metropolitan Life Insurance Company: In no other country of the world would it be necessary to explain the relation of insurance to industrial and social hygiene. In Europe insurance is compulsory, and in the larger European cities the great mass of citizens are insured along the line of prevention. Our company distributed 4,000,000 pamphlets, entitled, "The War on Consumption," calling attention to the fact that there are places where the individual may obtain treatment. We desire to cooperate with any agency in the community toward the prevention of tuberculosis and other preventable diseases. In Chicago we were asked to distribute copies of the ballot, which enabled the people of that city to secure a municipal sanitarium. We are now making experiments of sending a nurse to every sick policy-holder, and have been successful so far. Our policy-holders are being visited weekly, and if desired this association may make use of our organization in the promotion of public health.

Scope and Value of the Daily Press and Press Bureaus

Dr. John A. Kingsbury, New York City: The scope of publicity in public health is as broad as the scope of publicity in politics, and in order to be effective it must be made as striking as it is possible to make it. It is our problem in public health to arouse slumbering humanity to a full realization of the meaning of the frightful fact that disease germs cause the death of over fifty per cent. of the human race, and that in addition to this suffering and poverty which can hardly be imagined, we must convince the public that this great sacrifice is almost wholly needless. It is only within the last few years that there has been any considerable demand for the knowledge given the world almost a quarter a century ago by Koch. We must learn from the "patent-medicine" man his secrets of publicity. The trouble so far is that all the money that has been given in this field of work has been put into the manufactory department and the advertising end of the business has been almost entirely neglected. We must get our goods into circulation. Moreover, there is a lack of proper cooperation between the producing and developing departments of our work. The American Public Health Association has long been in the business of producing knowledge of inestimable value. If advertisements can create new wants and new desires the satisfaction of which builds up business for others, surely practical publicity can create a demand for such knowledge, and the nature and scope of such work would be limited only by its ability to get results.

The Physiologic Aspects of Ventilation

Dr. Theodore Hough, University of Virginia: There is no argument against the hygienic importance of ventilation. The history of the subject shows that it is not so simple as is often supposed. The poisonous material in the air of the room does not come from the lungs but from the skin, clothing, decaying food particles in the mouth or catarrhal exudates, from the air passage. It is important to distinguish between the acute effects following exposure to vitiated air and those effects which are produced by prolonged exposure. The toxic material, so far as it is a factor, does harm chiefly when it acts over a comparatively long period, and we must seek elsewhere the explanation of the acute effect. While the introduction of fresh air is of great importance in removing the unfavorable physiological factors, it is even of more importance to maintain an even temperature of from 68 to 70° F., since at this temperature the humidity is almost negligible, while the other ill effects, especially on the nervous system, seem to be less noticeable and less important.

Age Problems in Industrial Hygiene

Dr. Owen R. Lovejoy, New York: In many states we are embarrassed by the attempt to secure the enactment, and after that the administration of laws regulating the ages at which children shall be employed, because of the fact that it is impossible to tell when the ages began. The relation of age to industrial employment needs no discussion, yet we constantly meet ignorant people who think that a child is a small man, and that burdens which are proper for the man are proper for the child, if measured according to the child's age. There is a period between 10 and 16 that is so revolutionary in its nature as scarcely to be exceeded by the needs of the infant. It may be safely predicted that the awakening to the dangers of typhoid and other diseases will in another decade make the health department one of the most important, if not the most important department in any of our city governments. It has been assumed that the best employment for the child is agricultural, but it has been shown recently that on many truck farms conditions prevail that are seriously detrimental to the child. Health officers should carefully study the relation of the industrial education of the community to the development of the physical life of the child.

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES

Eighteenth Annual Meeting, held in Washington, D. C., Oct. 5-8, 1909

(Concluded from page 1769)

How to Keep War Ships Free from Infective Diseases

Surgeon R. C. Holcomb, U. S. N., showed first the prevalence of contagious diseases at the large training stations and outlined for discussion a method of keeping recruiting rendezvous free from infection. The recruit goes first to the receiving division, then to the observation division and finally to the clean division, from the latter of which the drafts are selected. He advocates barracks of the bungalow type, housing six men each, and constructed with a view to ease of disinfection. With this type of barracks less men are exposed when an outbreak of disease occurs and the work of disinfection is simple and relatively easy. The records of all epidemics on receiving ships are connected with overcrowding. The training station is an outgrowth of the old-time receiving ship.

Surgeon M. F. Gates, U. S. N., discussed the reception and care of recruits received on board ship. He believed that infections should be eliminated prior to the transfer of the men to ships, as receiving stations are sometimes foci of infection. Men should be inspected immediately on their arrival. Segregation is desirable. It is most important to have history of the recruits and a separate health record for the medical officer is desirable. He spoke of the value and needs of isolation wards, deck camps for isolation, camping parties for convalescents and then took up seriatim the consideration of the communicable diseases and the prevention of their spread. The essentials for the most ideal results are alertness of the medical officer and repeated inspection.

Surgeon C. M. Fiske had assigned to him the portion of the discussion referring to the care of the crew of a ship undergoing repairs in a navy yard. Medical officers must be familiar with local hygienic conditions as to climate, food and water supply, sewage, prevalence of infectious diseases, facilities of the station, etc., and must be prepared to make recommendations prior to arrival. The limitations of naval authority in the neighborhood must be taken into consideration. The conditions which attend the repairs of a ship in a navy yard are likely to be unhealthy; infectious diseases are usually introduced. The most efficient remedy lies in the unit barracks. Evil influences are the presence of civilian workmen and visitors on board, liberty parties, the food furnished by local contractors, the non-availability of sanitary systems on board, the proximity to shore, which favors the introduction of insects and vermin and the failure of civilian authorities to control contagious disease. They should be urged to report any indisposition however trivial. Daily exercise should be required. Workmen on board should be required to observe the regulations for the safeguarding of health. Separate toilets and other facilities should be provided for civilian employees. Fresh provisions should be carefully inspected. The laboratories of local hospitals should be utilized to detect bacilli carriers. There is need of a practicable system of drainage of a ship, when in dry dock.

Surgeon D. N. Carpenter, U. S. N., described the general and special measures for the care and protection of crews of ships in infected ports, including quarantine and sanitary recommendations, the duties of medical officers in infected ports, the sources of information regarding epidemics, the action to be taken in case infection occurs on board and the special measures to be taken in case of various national quarantinable, infectious and contagious, parasitic and venereal diseases.

The Public Health and Marine-Hospital Service

Surgeon Charles P. Wertenbaker, U. S. P. H. & M.-H. Service, in his paper on "The Duties of the Public Health and Marine Hospital Service," gave an exposition in general terms of the work done by the service and showed partially the points of contact between the spheres of the different services, thus indicating what the relations of the service might be to the medical departments of the army and navy.

Surgeon George B. Young, U. S. P. H. & M.-H. Service, discussed the possible relations between the Army, Navy and the Public Health and Marine-Hospital Service under the limitations of the existing law. There has never been any attempt to set forth briefly the legal status of the Public Health and Marine-Hospital Service to the other services as regards precedence, mutual support and possible interdependence in time of peace and war.

Medical Inspector L. W. Curtis, U. S. N., expressed his appreciation of the assistance rendered by the Public Health and Marine-Hospital Service during the recent cruise of the American battleship fleet. Advance information was frequently given in reference to the sanitary conditions in ports at which the fleet was about to call, and in other ways, the ship's surgeons had been materially assisted in keeping disease away from the fleet.

Lieut.-Col. G. C. Jones of the Canadian Medical Service stated that his long experience in public health work had led him to appreciate the value of the Public Health and Marine-Hospital Service, and that he had received most valuable information and assistance from the weekly reports issued by the service.

Laboratory Demonstrations

The association adjourned to the Public Health Laboratory, where the director, Passed Assistant Surgeon John F. Anderson, U. S. P. H. & M.-H. Service, described the scope work of the laboratory, and the chiefs of divisions demonstrated each his especial line of work. Afterward the members examined the laboratory and witnessed demonstrations of various kinds.

Entertainment

The entertainment provided for the members was lavish and varied. A reception was given in honor of the foreign delegates by Surgeon General Presley M. Rixey, U. S. N., president of the association, at his residence. Medical Director John C. Boyd, U. S. N., gave an informal buffet luncheon to members and foreign delegates at the New Willard. The members, foreign delegates and ladies were the guests of the president of the association and Mrs. Rixey at their summer residence, Netherfauld, Va. A mounted drill was given in the drill hall at Fort Myer through the courtesy of Col. Garrard. The Surgeon-General of the Army and Mrs. Torney gave a reception in honor of the association and its guests at the Shoreham. An automobile ride around Washington was arranged by the committee and participated in by the visiting ladies and many of the members and on the last afternoon the Surgeon-General of the Public Health and Marine-Hospital Service invited the members and guests to luncheon and an excursion to Mount Vernon on board the U. S. revenue cutter *Apache*. The women's entertainment committee held an informal reception for the visiting women at "The Highlands" and gave a luncheon for them at the New Willard Hotel.

Banquet

The official banquet in honor of the foreign visitors was given in the red room of the New Willard Hotel October 7. Covers were laid for 125. Surgeon-General Rixey, U. S. N., presided and Medical Director John C. Wise, U. S. N., officiated as toastmaster. The toast to the foreign countries represented by delegates was responded to by Sir Alfred Keogh, Royal Army Medical Corps, the senior foreign delegate, who expressed his appreciation of his cordial reception and of the hospitality of the association.

Advertisements

The executive committee decided to exclude all advertisements from the *Military Surgeon* excepting those approved by the American Medical Association. It also decided to increase the subscription price to $2.50 a year. Members hereafter will pay $3.50 per year, of which $2.50 will be applied as subscription and $1 as the annual dues.

Members Present

There were 172 who registered at the meeting. Of these 31 were representatives of the Army, 33 of the Navy, 12 of the Public Health and Marine-Hospital Service, 56 of the National Guard and Naval Reserve, 18 of the Medical Reserve Corps, 4 acting assistant surgeons, U. S. A., 3 officers of United States Volunteers and 1 Canadian officer.

MINNESOTA STATE MEDICAL ASSOCIATION

Forty-first Annual Meeting, held at Winona, Oct. 12-14, 1909

(Concluded from page 1768)

Right Inguinal Hernia and Concurrent Appendicitis

Dr. Walter Courtney, Brainerd: Observation of conditions found at the mouth of the hernial sac and the occasional necessity for post-herniotomy appendicectomies have led me, since 1904, to explore systematically and to remove diseased appendices through the internal ring when operating for the radical cure of right inguinal hernia. Since that time I have performed seventy-six appendicectomies in this manner. The result of this work has demonstrated the existence of concurrent appendicitis in a great majority of my cases of right inguinal hernia. As is well known, there is greater frequency of right over left inguinal hernias and the possibility of appendicitis as an etiologic factor should be considered. The operative technic offers no great difficulties in the majority of cases. The educated finger frequently can find and withdraw the appendix through the internal ring. Failing in this one or more narrow retractors may be inserted through the ring, permitting a view within the abdominal cavity; the cecum can thus be recognized by its blue or grayish color and withdrawn by rubber-tipped forceps. In only one case during the last two years did I find it necessary to go above the internal ring to explore and remove the appendix. No postoperative complications have followed this method of performing appendicectomies in my work.

DISCUSSION

Dr. Archibald McLaren, St. Paul: I think that in the past few years many surgical men have been led to the same truth, probably in the same way as Dr. Courtney. My first experience was much the same; I found a gangrenous appendix in the hernial sac. It is always a wise thing to remove the appendix under those conditions. I have had to make the cross-muscle incision oftener than Dr. Courtney has, and that is because I have not followed exactly his line. I find that one incision is much better than two separate ones, but if there is any difficulty in reaching the cecum that is the muscle incision that will least weaken the abdominal wall and if the surgeon cannot do the work properly through one incision there ought to be two.

Dr. A. T. Mann, Minneapolis: Two years ago I wrote a paper in which I mentioned the three classes in which we are liable to make a mistake. In one of the classes are the cases in which there are few symptoms, irregular, perhaps only a few symptoms of indigestion, an individual has more or less repeated attacks of indigestion that do not come from any known cause nor with any regularity that might point to any definite cause. In these cases, instead of making a diagnosis of chronic indigestion the physician should find out whether the appendix region is tender. If the patient complains of tenderness on this side then a definite examination of the appendix should be made, and if it is from the appendix the case is one of subacute exacerbation of chronic appendicitis, which may not have given further symptoms up to that point to call attention to the trouble, but which is liable to cause an acute attack and a bad attack and the appendix should be removed.

Dr. R. C. Dugan, Eyota: I have several times seen the appendix present in the hernial sac and now make a rule to obtain permission for its removal in all cases of right inguinal hernia. Such permission should be obtained in every case in which the abdomen is opened. In the future I shall follow Dr. Courtney's plan. I believe that the slight stretching of the internal ring, instead of being a menace to success, will rather be a benefit. Several times I have purposely cut the upper edge of the ring when the internal ring was round and indurated. I have had several patients complaining of sudden pain in the right side following a strain that simulated appendicitis very closely, but on passing the finger through the external ring a bulging at the inner ring could be felt. These patients are frequently cured by wearing a truss for a short time and are the only cases of hernia for which I ever prescribe a truss.

Cancers of the Cecum

Dr. W. J. Mayo, Rochester: Carcinoma of the cecum usually has its origin close to the ileocecal valve, therefore both the ascending colon and cecum are involved. The lymphatic drainage extends into the lymphatic glands at the base of the right colic artery and also into the ileocolic group. For all practical purposes malignant disease of the cecum and ascending colon can be considered as one. In estimating the feasibility of removing malignant diseases of the cecum examination of the liver for embolic carcinoma should not be forgotten. In our experience hepatic secondaries have been a larger cause of contraindication to radical operation in mechanically removable tumors than inoperable glandular metastasis. Rectal examination should be made for carcinomatous nodules in Douglas Pouch, the discovery of which would indicate an operable condition. The most important feature of surgery of the cecum is the question of obstruction. The mortality of necessary operations can be closely measured by the degree and acuteness of the condition. The late acute conditions should be treated by preliminary enterostomy. If immediate resection is made in obstruction the distended proximal gut should be emptied by Monk's tube. The most important technical feature in the operation for cancer of the cecum is the mobilization of the intestine for purposes of operation. The large intestine has a long mesentery. All its blood, nerve and lymph supply lies in the inner leaf of the mesentery and arises from the abdominal aorta and vena cava or in that vicinity. It is true that the outer leaf of the mesentery is exceedingly short if not absent in the ascending colon, but as the outer leaf contains no structures of importance it is only necessary to divide it, lift any part of the colon from its bed and swing it on its inner leaf to the midline. In separating the cecum and ascending colon and ligating the blood vessels identify the duodenum and ureter.

It will sometimes be found that a neighboring viscus has become involved and attached to the malignant growth. If conditions are otherwise favorable this should not be looked on as a contraindication to operation and multiple resections are made simultaneously.

The first steps in the resection of the cecum and ascending colon are: 1. Free incision through the right rectus muscle. 2. Liberation of the cecum and ascending colon by an incision through the outer peritoneal attachment. 3. With a piece of gauze the intestine with tumor and fat is wiped clean to the muscles as far as the superior mesenteric origin of the ileocolic and right colic vessels, which are tied at once enabling an accurate dissection of the mesenteric glands and fat. 4. Clamp hepatic flexure and lower ileum at proper points and remove the diseased segment. 5. Ligation of ends and sterilization. 6. Close the bowel ends with purse-string sutures. 7. Ileocolostomy, usually lateral anastomosis. 8. Closure of the mesenteric rent and the covering of the denuded surfaces with peritoneum.

DISCUSSION

Dr. Archibald McLaren, St. Paul: The way I have usually done is to start from the other side, but the next attempt I make shall be from the outside, because I am sure that is the practical way. In these tumors when it is necessary to make resection of the intestine my experience is that it is very unsatisfactory. I was amazed in looking over my own statistics to see how very unsatisfactory the results have been that I have obtained so far; 60 per cent of three-year cures is infinitely better than I have been able to get. Tuberculous growths are also of the same character and it is necessary to have a growth under the microscope before one can tell whether it is malignant or tuberculous in character.

SYMPOSIUM: COOPERATION OF STATE FORCES IN MINNESOTA MEDICINE

The State Board of Health

Dr. H. M. Bracken, Minneapolis: The opportunities for cooperation between organizations interested in public health matters is almost unlimited. The forces interested in public health are:

(1) State Departments:
- The Governor of the State.
- The State Board of Medical Examiners.
- The State Board of Health.
- The State Medical Society.
- The Department of Public Instruction.
- The Dairy and Food Department.
- The Labor Bureau.
- The Live Stock Sanitary Board.
- The State Board of Control.
- The State Drainage Commission.

(2) Schools and Institutions:
- Public Schools.
- Colleges.
- Normal Schools.
- The University.
- Medical Schools.
- State Institutions.

(3) The People:
- The Federation of Women's Clubs.
- The Commercial Clubs.
- The Labor Organizations.
- The Charities Organizations.
- The Municipal League.

Public health matters should be a common meeting ground for the above representative bodies and the State Sanitary Association affords the opportunity for such work. The Minnesota State Medical Association should take an interest in reaching the people through lecturers and through the county medical societies. Public health lecturers should be in the field; the tuberculosis exhibit should become a traveling exhibition rather than being specialized as now and necessary means should be obtained through the legislature for carrying on a campaign of education and meeting the necessities involved in the work. The Minnesota State Medical Association should take a deep interest in the work of the Minnesota State Board of Health, and someone should be kept at the capitol interested in legislative matters during each session of the legislature. Legislators are not well versed in matters pertaining to public health and it is easy for some selfish individual to kill a bill relating to medicine. The State University can do a great work by sending out students from the academic department with some knowledge of the principles involved in public health, while the special departments, such as medicine, law and engineering, should give their students some training in such matters.

The State Board of Medical Examiners

Dr. F. A. Knights, Minneapolis: All medical forces in the state ought to be influenced by the State Association because it is in position best to voice the sentiment and further the interest of the profession in the state. Much misunderstanding has existed as to the duties of the board. Many members of this society suppose it to be the function of the board to regulate illegal and irregular practice throughout the state and legally to prosecute the offenders. This is not the case, but, recognizing its moral obligations, also the demand of the profession, prosecutions have been brought which have almost uniformly been unsuccessful. For this the board has been severely criticised. Cooperation should be promoted and this effort would tend probably in the regulation of irregular practice. If Dr. McCormack were with us always he might educate the people for us and the rest would be easy. If Ramsey and Hennepin counties were sufficiently interested to assess their members from $3 to $5 each for three or four years and spend the money judiciously they could clean up the two cities. The rest of the state could be cleaned up if each member of this association would put up $1 for the same length of time. The services of an expert might be secured who should procure and collect evidence, put it in shape for use, give advice as to the best method of procedure by the county societies and spare the local men the annoyance of the thing so far as possible. This would require money, but it would be bread cast on the waters.

The State Board of Control

Dr. H. C. Tomlinson, St. Peter: I hesitate to speak of public institutions and their management, because in the eighteen years I have been a member of the Minnesota State Medical Association I do not recall ever having received a word of encouragement or any evidence of interest in the work of these institutions on the part of any member of the association. It may surprise you to know that under the State Board of Control there are over 6,000 people who require more or less constant medical supervision and that twenty-two medical men are engaged in this work. The difficulty is that when a patient is sent to one of these institutions he immediately departs from the physician's mind. This has its influence on the Board of Control. When we ask them for means to do medical work they say they have never heard a physician or medical body say anything about the necessity for such a demand. The general public is not responsible for this sort of ignorance, but it is the medical profession, you people sitting here. The State Board of Control is extremely anxious to do everything it can to help us, but it also recognizes the fact that we do not have the backing of the medical profession in any of the things we ask for. The idea seems to be that the sole function of these institutions consists in hiding certain people away from the public. We have on an average 375 operations in our institution in a year, and we have practically every form of disease, except acute contagious diseases, all the time. The members of our board are like the people from Missouri, they want to be "shown," and if the State Medical Association would cooperate with these institutions and with the authorities that control them, it would not only be an advantage to the medical profession, but to the public at large.

The University Medical School

Dr. Charles Lyman Greene, St. Paul: The position and standing of the school will serve as an index to the position and standing of the medical profession of the state. The advance of medical standards has made it possible for Minnesota to achieve the unique and desirable position of having but one fully organized medical school within her borders, and that school is of the state and for the state. The school is already ranked among the best in the United States. However, there are certain needs of the school, among others the maintenance of a great state hospital on the university campus; postgraduate instruction of a practical kind; a definite department of public health; a special fund for research and the employment of research workers, and the present close relation between public health and medical teaching must be maintained and extended. A better relation must also be established between the medical school and the individual physician and a way found to teach medicine in every hamlet in the state. Minnesota was a pioneer in establishing higher standards of medical education. Sectarian medicine is disappearing throughout the United States and it is fast becoming an impossibility for anyone to practice the healing art within the narrow limits of any so-called school. Another year will see the temporary hospital structure replaced by a modern building containing at least 100 beds, which will mark the beginning of the greater hospital of the future. We of the university teaching staff are enthusiastic and confident and with your help we shall build high for the present and yet higher for the future of Minnesota medicine.

The Medical Press

Dr. William A. Jones, Minneapolis: The old-time epigram, "Between the devil and the deep sea," might easily be transposed into the following sentence: "Vast numbers of the medical press after passing through the hands of the devil find an abiding place in the deep sea—a receptacle into which the doctor often throws his medical journal unopened and unread." Literally, this is not true. A large perecentage of the medical men religiously open and read their journals and claim that they are profited thereby; but, unfortunately, there are many medical men who find too little time to read or who are indifferent to current medical literature.

Dr. Jones then considered functions to be performed by the medical press. What it means to conduct, edit and publish a medical journal, its province and duty of its readers. Matter that should be contained in a medical journal. The Minnesota State Board of Medical Examiners, the Minnesota State Board of Health, the University Medical School and the Minnesota State Medical Society should unite as state forces in the education of the people on medical matters. A medical journal must be supported financially, and how. No journal with a limited subscription list that is published in a circumscribed community can ever be made a fortune-paying investment. The effort to maintain a journal that is clean and respectable should be supported by the physicians of the state.

The Lay Press

Mr. H. V. Jones, Editor Minneapolis Journal: The press represents a great responsibility in this country as does the medical fraternity. I think that if we had with us to-day a representative of the law we could say that these three great professions hold the greatest responsibilities of the people in their hands. Health, public opinion and justice are the foundation of our government and prosperity. I think that the medical men of the state and nation have been governed by their law too long. The people know too little of what they are doing. I do not understand the exact alliance you have with the state university medical department, but I am sure that there is a great work going on that the peoule should know about. I think the medical profession has been standing too long on ethics. It has a right to be heard and should speak out. I am not speaking in a personal sense, but the state association has a right to be heard. We have only to listen to papers we hear on occasions like this to catch the drift. Physicians would be surprised to learn how little people know of what is going on regarding the care of the health of the people. The newspaper men and the railroad man have always gotten along very well together, because the railroad man is generally ready to give results with real enthusiasm; but when we come to the doctor we find it difficult to make much progress, but I think if we could come together a little more we could soon reach an understanding. I am sure newspaper men would be glad to cooperate along the right lines with physician and official bodies. That work to my mind should be educational rather than in the line of news. The press has been too commercial, there has been a letting down of standards, and too much desire to make money at the expense of standard and principle, but I think a reaction has set in. I think the time has come for the medical association of this state to take up in some way a broad educational work, and I am sure it would have the hearty cooperation of the press in this state. I do not know just how a movement of this sort should be organized, but it occurs to me that the people should be told what physicians are doing and what they are going to do. I want to leave this thought with you, that the press of the state would be glad to cooperate in establishing a newspaper educational policy along the lines of what physicians are doing, omitting names, by studying the lines of work along which they are moving.

SYMPOSIUM: OPHTHALMIA NEONATORUM

Unnecessary Blindness

Dr. Frank C. Todd, Minneapolis: Ophthalmia neonatorum is a frequent cause of blindness. Statistics furnished by Dr. F. U. Davis and Dr. Dow show that 10 per cent. of the blind of all ages in the United States owe their blindness to this disease; from 10 to 11 per cent. of the blind in the school for the blind at Faribault are blind from this disease. While most severe cases result from gonococcus infection that others result from common pus infection. When the disease develops, it can only be properly treated by an ophthalmologist, assisted by trained nurses who should be in constant attendance. Two such nurses should be employed and preferably those skilled in the treatment of this particular disease. Patients whose parents are unable to employ nurses should be sent to a charity hospital. If midwives and physicians would always practice the prophylaxis discovered so long ago by Credé, the disease need not exist. The work of the Committee on Ophthalmia Neonatorum of the American Medical Association, headed by Dr. F. Park Lewis, should be endorsed, and the Minnesota State Medical Association should put itself on record in regard to details, as to the best way of eradicating this disease in Minnesota.

Etiology and Prophylaxis

Dr. J. C. Litzenburg, Minneapolis: The conjunctiva of the new-born infant is peculiarly liable to infection. Many germs may cause infection, but the gonococcus is responsible for at least 65 per cent of the cases and for nearly all the severe infections. Ophthalmia neonatorum may almost surely be prevented, and a 2 per cent. silver nitrate solution is the surest prophylactic, although the 1 per cent. silver nitrate is nearly as valuable. Bichlorid of mercury, 1 to 2,000, is a good substitute and should be used if one has not the silver. If a prophylactic were used in the eyes of every new-born baby the present rate of ophthalmia neonatorum will be greatly reduced. The treatment of the disease should always be entrusted to an ophthalmologist.

The Sterilization of Habitual Criminals and Degenerates

Dr. Burnside Foster, St. Paul: It will generally be admitted that a very large percentage of the habitual criminals, degenerates and sexual perverts in all communities are the offspring of parents of the same kind as themselves, and that their children will in all probability be tainted in like manner. There is then in every community a large class of individuals who are unfitted to marry and beget children. It may be broadly stated that no man or woman who is afflicted with either a communicable or an inheritable disease should marry or have sexual relations, whether married or not. How far the state can go in this matter is a difficult question to answer. The large class embraced under the comprehensive term, "degenerates," are sure to beget and procreate their kind, and this curse will be passed on to future generations unless radical means are taken to prevent it. While under present conditions the state cannot take charge of these degenerates in a community who have committed no crime, I believe it has the right to take those legally committed to its charge and under proper restriction so deal with them that they may no longer be a menace to society or to future generations. The state of Indiana has enacted a law by which an institution entrusted with the care of individuals of this class may, after consultation with a board of physicians appointed for that purpose, have performed an operation for the prevention of procreation. The operation is that of double vasectomy, and during the first year following the passage of this law 412 persons were operated on in the reformatory at Jeffersonville, Indiana, without a single accident or loss of an hour's time on the part of the prisoner.

The responsibility of the commission is a grave one in the way of distinguishing between hopeless cases and individuals who may recover, still I believe that this generation owes it to the next one to take every precaution to prevent the handing down of types of degeneracy. In Indiana sterilization has been applied, so far, only to the male, although the law permits of its application to women. Ligation and section of the Fallopian tubes would be as effectual in the female as vasectomy in the male, although a little more dangerous. Another much simpler method of sterilization may be available in the near future. I refer to the x-rays. By experiments on animals it has been shown that the development of the spermatozoa in the male and of the ovum in the female has been inhibited through the influence of the x-rays. It has been observed, however, that this sterilization usually has been temporary and that the animals regained their full power of reproduction later. X-ray operators have found that they themselves could produce no spermatozoa. Just what the x-ray does to the testes and ovaries is not known, and this method is uncertain and unscientific. This paper has been prepared for the purpose of suggesting that the Minnesota State Medical Association take definite steps to have this matter presented to the legislature with a view to having a law enacted in the State of Minnesota providing for a scientific method for the prevention of crime in future generations.

Empyema: Diagnosis and Treatment; A New Instrument for Securing Permanent Drainage

Dr. W. T. Adams, Elgin: It is the duty of physicians to have a better understanding of empyema, and more should be done to avoid the serious sequelæ so common after this disease. The disease is simple, and its treatment should be like that of any other accumulation of pus. It often follows pneumonia, and when elevated temperature continues after the normal limit in pneumonia, empyema is to be looked for. When fluid is diagnosed it should be differentiated with the exploring needle so that operation may be done early. In diagnosis the percussion note is valuable; if the note is flat there is fluid. Auscultation will sometimes be misleading on account of transmitted sounds, while the percussion note will be flat and is more to be relied on. Fever continuing after fluid is formed is certain to indicate infection. If pneumococcic, aspiration may cure, but if recovery is not very prompt, permanent drainage should be made very early. Early operations are preferable, before adhesions have had time to become very strong. Early operation should be made to stop autoinfection from the retained pus. All parts of the chest should be drained and walled off compartments may require separate drainage. Resection is not always essential and I advise against it. The chest should be drained without admitting air so as to force the lung to expand as the fluid is withdrawn. If the fluid is withdrawn without admitting air the lung will expand as the fluid runs out. The open method of operation does not invite expansion, but makes it impossible.

In order to drain the chest without admitting air, I have designed an instrument which meets the indications in the most perfect manner, and renders the early operation easy of accomplishment, and is cleanly and neat in every particular. The instrument is a modification of the cannula and trocar, so constructed that as the trocar is withdrawn from the cannula after its introduction in the chest, the proximal end of the cannula is closed against admitting air by pinching a piece of tubing. The cannula has a "T" branch with opening continuous with the tube of the cannula, which takes the fluid and delivers it into a sealed rubber bag which is deflated when attached, hence no air can enter the chest from that source. Another important feature of the instrument is a pneumatic cushion with which the shaft of the cannula is surrounded from a point on the distal side of a guard plate with which it is provided, to the distal end of the cannula, where it is inserted into a recess of the expanded end of the cannula, which makes it keep its place while the instrument is being pushed through the wall of the chest. When the instrument is properly applied, the pneumatic cushion extends through the wall of the chest with the cannula which it surrounds, and its middle portion is grasped by the chest wall, while the proximal end is without, and the distal end is within the chest. The cushion is double-walled, and the space between the walls, the ends of which are securely sealed, forms an air chamber to which is secured a small piece of rubber tubing, by means of which air is pumped into the interior of the cushion, which distends its outer walls, causing the two ends to balloon, which shapes the cushion like a dumbbell, the contracted center occupying the passage through the chest wall, while the ballooned ends serve to make an additional seal against admitting air, and forms soft, easy cushions to protect the body of the patient against the burden of the cannula.

SYMPOSIUM: TYPHOID FEVER, A MEDICAL AND ECONOMIC PROBLEM, AS ILLUSTRATED BY THE MANKATO EPIDEMIC OF 1908

The History of the Local Administrative Health Work

DR. A. O. BJELLAND, Mankato: The source of the water supply of Mankato is four deep artesian wells on Washington street. Two of these wells are within from 16 to 18 feet of the pumping station. The main outlet of the sewer also runs down Washington street, emptying into the river. A great flood occurred May 20-24. The gate in the main trunk of the sewer was left down on the night of June 24, 1908, presumably to keep the river from backing up into the sewers. This caused a backing up or a stasis of the sewage which backed up into a well pit of the new artesian well near the pumping station, hence sewage was pumped into the water system. Two of the other wells and suction mains were rusty and leaked and had not been properly looked after for a number of years. Then came a sudden sharp epidemic of diarrhea June 26; probably 2,000 people were affected. The people were at once advised to boil the city water so as to be on the safe side. The Minnesota State Board of Health was called on to make an investigation and June 29 Dr. Bracken, Dr. Hill and the health officer made an investigation of well pits and reservoirs and decided from the circumstantial evidence at this time, with the clinical evidence of intestinal disease, that the city water was contaminated and that we were in for an epidemic of diarrhea and predicted a possible typhoid epidemic. The Third street well was shut off, the reservoir cleaned and a flushing of the mains ordered. Samples of the city water from the taps and well pits were taken for analysis at the State Board of Health Laboratories, and on July 12 analysis showed colon bacilli present. July 11 and 12 Widals tests were made and these, together with clinical evidence, showed positively that the disease we had to deal with was typhoid fever. Over 100 Widal tests were made during the epidemic which showed positive reaction.

The first step taken by the health office, June 27, was to order the city water and milk boiled. The second step was to organize an emergency hospital of thirty-five beds. The German Catholic school was utilized for this purpose. A street cleaning and disinfecting department was organized and a general cleanup of the town instituted. The two daily city papers and a German paper were utilized to warn and instruct the people of Mankato how to handle and take care of themselves and how to avoid contracting typhoid fever. A wide-open systematic policy of publicity was inaugurated and was successful in holding down the epidemic in fifty-seven secondary cases. A health office was organized, a stenographer installed, maps of the water mains and sewer system were obtained from the engineer, a filing system was used so that as soon as the report of a case came in the health office, the health officer or assistant went to the house and wrote the history of the case. Visiting nurses were then sent to these places and by an object lesson in nursing, taught the family how to nurse the patient and how to avoid contracting the disease. The nurses made a house-to-house canvas, spreading the gospel of cleanliness and carefulness, and did a great work for us in general.

Having, in July, 1907, secured the passage of a milk ordinance, we were able to keep the typhoid infection from the milk. Through Mr. Manley, of the Minnesota State Food and Dairy Commission, this work was looked after under the direction of the health officer. A milk ordinance in any city making it necessary that all milk producers report promptly any contagious or infectious diseases existing in their families, is a great weapon in the hands of a health officer. Proprietors of all places where food or drink was sold were systematically warned to be careful and taught their responsibility as food and drink purveyors. The physicians in the city were urged to report all cases. Frequent consultations with Dr. Bracken, Professor Bass, consulting engineer, and the State Board of Health and Dr. Hill, the epidemiologist, together with a thorough inspection of the wells, sewers, water plant and the infected districts, gave us a thorough working knowledge of the situation and the needs thereof. The epidemic lasted from June 26 gradually and died out by Nov. 20, 1908. We had 464 cases reported into this office from July 7 to Nov. 20, 1908; 401 primary and 57 secondaries or contact cases, and six outside cases.

The Engineering History of the Mankato Typhoid Epidemic

PROF. F. H. BASS, Minneapolis: The widespread prevalence of typhoid caused suspicion to be directed toward the water supply, although it was known to come from below the surface of the ground at a depth of about 400 feet. An examination of the artesian wells revealed the fact that two of the four in use were defective. These wells terminated at the surface in pits which were approximately five feet in width and seven feet in depth. As the flow exceeded the demand, the wells furnishing water under pressure, were allowed to waste into the pits when not being drawn on. The overflow was in each case conducted from the pits to the sewer through pipes or orifices six inches in diameter. On June 26, an unusually high stage of water in the Minnesota river combined with a cloudburst backed the sewage up into the pump pits, whence it was drawn through the rusted out well pipes into the suction main and distributed thence to the city. One other combination of uncharted water and sewer and drainage pipes at the pumping station furnished a considerable amount to the pumps. The result of the investigation demonstrated the need of prompt remedial measures. A sanitary engineer was employed and has since remained in Mankato, reconstructing the public works of the city. The wells have been redrilled, newly piped and absolutely cut off from any possible connection with the sewerage system.

Diagnosis of Smallpox

DR. J. M. ARMSTRONG, St. Paul: Smallpox during the last few years has been an exceedingly mild disease, only six cases out of 978 being fatal, so that the mortality rate is 0.6 of 1 per cent., less perhaps than any other transmissible disease. Because of the benign type the disease has assumed, the diagnosis must often rest wholly on the objective lesions of the skin, which lesions present characters which make a positive diagnosis possible a few hours after their appearance. The papules appear first on the exposed parts, particularly the forehead and flexor surfaces of the wrists. They are under the epidermis, hard, round, flat-topped, umbilicated, rose-pink and waxy in appearance. All these characteristics are usually present. The entire evolution of the lesion from papule, vesicle, pustule, to scab formation, is regular and characteristic. The lesions vary in number, from a very few they may be so numerous as to become confluent, but the individual characteristics of the lesion are present in all cases. Vaccination is the only protection to the disease and if successfully performed, rarely fails to protect. Only 116 out of 978 patients ever claimed to have been vaccinated and many of these claims could not be substantiated.

KENTUCKY STATE MEDICAL ASSOCIATION

Fifty-fourth Annual Session, held at Louisville, Oct. 19-21, 1909

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President's Address : Medical Organization and Work

DR. ISAAC A. SHIRLEY, Winchester: This large and representative gathering of Kentucky physicians is an undeniable endorsement of the organization movement inaugurated by the American Medical Association a few years ago. Before that time, with a membership of scarcely 300, we had an average of one-fifth that number in attendance at our annual gatherings. To-day there are more than 2,150 names enrolled on the society's books and we can count approximately one-third of that number here. Pleasing as this must be to every well wisher of legitimate medicine, there remains much work to be done. Without the fold there are more than 1,500 men and women who, to make our work effective and our joy complete, must be garnered in. To this end I propose to devote my best individual efforts, but realize that to accomplish the desired results will require work, constant work, on the part of every one. I ask your hearty and earnest cooperation.

An alarming defect in our law is the lack of punishment for criminal abortion. Judge Hines stated that in Kentucky there was no punishment for this crime prior to the period of quickening and after that it was only a high misdemeanor and at no time a felony, unless the mother died, and then only an every-day common murder.

I do not think that the work of the State Board of Health in ridding our state of quacks and other reforms accomplished has been properly appreciated. And while I do not agree with everything it has done, yet it has done so much more good than bad that the former largely outweighs the latter, and I personally thank them for it. I am in favor of a national reciprocity law; if a man is entitled to practice medicine in one state of the Union he should be entitled to practice in every other state, and I hope that such a law will soon be passed and that we shall do what we can to that end. I also want to enter my earnest protest against the almost universal habit of treating clergymen free of charge. I hope that this will not be considered an attack on the ministry, for the members of which I have the greatest respect, and many of whom are among my best friends; but I do not believe in discriminating in charity patients, or if any one objects to the word "charity," say poor patients. If a minister, on account of inadequate salary, too large a family, or any other reason, cannot pay for medical attention, then we should treat him willingly, gladly, gratis; but I have known many physicians who, on account of personal property, were kept guessing as to where the necessities of life were coming from, work for ministers whose salaries were sufficient to insure ease, comfort and luxury for nothing save "thank you," and sometimes not that. And this is what I object to and protest against.

Treatment of the Toxemia of Pregnancy

Dr. Edward Speidel, Louisville: Under favorable circumstances a multipara should be in charge of her physician from the sixth month, and a primipara from the third month of gestation. Even before that time the primipara may derive some relief in the period of nausea and vomiting, by intelligent directions of the attending physician, while at times he may detect early signs of and even ward off pernicious vomiting. Thereafter, the conduct of the case consists in careful regulation of the diet, especially in the last two months of gestation, proper advice in regard to exercise and clothing, avoidance of constipation, but most of all attention to the action of the kidneys. If the points recently brought out by Skeel in his excellent paper on the "Toxemia of Pregnancy" are confirmed by later investigations, then we will at least have something definite on which to base our therapy and the toxemias of pregnancy need no longer be treated in the haphazard empirical manner that has been the custom in the past. Again, if the two conditions, hyperemesis gravidarum and eclampsia present such pathologic findings, that they must be considered as early and late manifestations of the same process, then our treatment again narrows itself down to the elimination of the toxic agent that is common to them both. With the knowledge that the pregnant woman ordinarily has a blood-pressure not exceeding 150 mm., and that in toxemia it goes to 160 and 180 mm., and that under such circumstances there is a retinitis that is absolutely diagnostic of severe toxemia, then with such evidence we are justified in a resort to radical measures. An increase in blood-pressure above the normal 150 mm. with the retinal symptoms present in the early toxemia, will give us a basis for treatment and serve as a warning signal in the occasional patient who does not have albumin in the urine. Prompt elimination by all the emunctories and absolute restriction to a milk diet until marked improvement shows itself, should be the keynote of treatment. From 5 to 10 grains of calomel, followed by tablespoon-doses of Epsom salts, and then daily administration of small doses of Epsom salts is one of the simplest and best methods of combating autotoxemia and should begin the treatment. This with a milk diet alone, will often control the condition and the patient may go on safely to an uncomplicated delivery. When these measures alone are not effective, then the patient should be kept under careful observation and an account kept of the blood-pressure as indication for extreme measures. In the meantime, hot normal saline solution should be introduced into the colon, in quantities of a quart at a time, two or three times a day. Hot wet packs with the introduction of carefully wrapped and lighted electric bulbs in the pack to keep up the heat and produce a profuse sweating should also aid in elimination. Thyroid extract in doses of 5 grains every four hours, is advocated by those who consider the toxemia due to a functional insufficiency of the thyroid. Thyroid gland or extract administered in this way acts promptly in reducing blood-pressure, but its beneficial effects are counteracted by the fact that the drug causes a marked increase in tissue waste and therefore a considerable increase in the urea and other waste products in the blood and urine. It should be possible in most cases, if the above measures are carried out carefully and successfully, to carry the patient through a safe delivery, at any time, however, if there is a dangerous rise in blood-pressure, and if ocular symptoms present themselves, then the physician must understand that his patient is in extreme danger and that she may be liable to an eclamptic seizure at any time. There is then only the choice between venesection, the use of veratrum viride, and a premature delivery. With these pertinent objections to both venesection and veratrum viride it becomes evident that when the toxemia does not respond to the simple measures first advocated, that a premature delivery offers the best chance for the patient, according to modern ideas on this subject. In the multipara, this may mean a resort to bougies and slow manual dilatation; in the primipara with rigid undilatable cervix it will be best to resort to a preliminary manual stretching of the perineum and vagina, then vaginal Cesarean section and delivery.

Surgical Treatment of Cancer

Dr. A. J. Ochsner, Chicago, Ill.: 1. The earliest possible diagnosis of cancer must be made. 2. In case it is not possible to exclude cancer in the diagnosis, more competent counsel must be called. 3. The growth must be removed extensively even in the earliest cases. 4. In case the physician is not competent to make extensive removal of the growth, he should refer the case to one who will do this at once. 5. A search for new tests which will determine the presence of cancer early should be continued by scientific observers and supported by clinicians. 6. The search for the cause of cancer should be vigorously pushed. 7. At present, negative results in diagnosis by laboratory tests must not be considered of sufficient importance to prevent operative treatment when physical examination indicates the presence of cancer.

DISCUSSION

Dr. William J. Mayo, Rochester, Minn.: Dr. Ochsner, with his large clinical experience and keen observation, has placed his hand on the difficulty which has arisen in the past. That is, we as surgeons have asked medical men for a diagnosis of cancer which they could not make and then we have blamed them because the cases have been referred to us for operation at a period of time when it was impossible to do perhaps more than a palliative operation. We must have team work. It is impossible for the surgeon working alone, for the clinician working alone, or the experimental man working alone to say that his is the only way. It is by a combination of these that we can bring forward some method by which cancer in various parts of the body may be dealt with at an earlier time. The surgeon must have these patients early for operation if good results are to be obtained. And in order to do this he must have the cooperation of the internist, and it should be the duty of every practitioner of medicine to teach the people just as they do in Germany. In Germany to-day the reason better results are being attained than in this country is not because better work is being done, nor because the operations are more extensive in cases of cancer, but because there is a widespread effort on the part of the profession to teach the laity. This subject has been up before the American Medical Association and at present there is a committee on publication of information with reference to cancer. People must be taught some of the more common signs and symptoms of cancer. If we expect to accomplish more in the future than we have in the past the laboratory man, the clinician and the surgeon must work together in harmony.

Dr. William D. Haggard, Nashville, Tenn: Next to the great white plague, the subject of malignant disease in general is one that should receive our greatest interest because it is not generally appreciated that one out of eleven persons who have passed the age of 30 is going to die of some form of cancer. Out of 572 patients with cancer on whom Dr. Ochsner has operated in the last five years, approximately 100 of the lesions were of the breast, 100 of the uterus and 100 of the stomach. Therefore, it should be our earnest endeavor to concentrate our attention upon this subject. It would be well for us to remember the address of Dr. Maurice H. Richardson, as chairman of the Section on Surgery and Anatomy of the American Medical Association in 1905, in which he said that "every neoplasm, wherever situated, should be removed, if possible, at the earliest moment it is recognized." If we would simply take that lesson home with us we would make a great step in advance. It is said that 90 per cent. of all "lumps" in the breast in women over 30 will become malignant. If that is true it behooves all of us, when a woman complains of tumor of the breast, not to say that it is a glandular tumor or an adenofibroma, but to take it out. It is a small matter and microscopic examination will subsequently show whether or not it was malignant. And, if so, while the stitches are in place, a little incision can be made and the entire breast amputated in a classical way, and I venture to say that we will get 50 per cent. of cures in that type of case.

DR. J. GARLAND SHERRILL, Louisville: It is the duty of every physician to make it plain to his patients that cancer is not an incurable disease provided the remedy be applied early. There is one thing that the profession does not seem to be well aware of and that is cancer no longer appears after 40 to 60 years of age, but that it appears now as early as 12, 15 and 18 years. I have had recently under my care a girl 18 with cancer of the intestine extending from near the anus up to the left flexure of the colon. If we would impress on the profession that carcinoma exists in patients under 35 years of age we will have made a great step in advance at this meeting.

DR. WILLIAM H. WATHEN, Louisville: There is no one who appreciates the bad results that we have had in the surgical treatment of cancer more than he who has confined his work largely to uterine surgery and to intestinal surgery—structures that cannot be seen without a most thorough examination or without an exploration. Unfortunately most of the cases of uterine cancer that have been referred to me have been done so too late for more than a palliative operation. It is true that a few patients in whom the cancer had not involved the structures extensively, have remained permanently well. Whenever the cancer extends higher up and invades the parametrium, then it is a difficult matter to save these patients or to give them permanent relief; and permanent relief was not given until we were taught to operate by the suprapubic method and to enucleate the cancerous tissues far down on each side, removing the diseased parametria and, if necessary, dissecting the ureter. Some of these patients when so operated on have remained permanently well. I have one patient in whom there was an extensive involvement of the structures, who has remained well for three or four years, while I have had others in which the relief was of shorter duration. Permanent results would be much better if we saw these patients with cancer of the uterus earlier.

DR. A. J. OCHSNER, Chicago: In regard to the education of the public with reference to cancer, there is one thing which is very difficult to overcome, namely, almost every person in every town in this country knows of her friends who have had cancer and who have undergone operations and perhaps have died from the return of the disease. But very few of these people know of any patients who have recovered permanently, because those who recover permanently from this disease do not want their friends to know they had cancer and had undergone operation for its removal. I meet this condition constantly.

Prophylaxis in Medicine

DR. C. G. STEPHENSON, Becknersville: Our duty is to prevent or to remove all injurious external conditions which experience has shown will contribute to the development of disease and to strengthen or improve the faulty constitution and thus remove predisposition to disease. General prophylaxis consists in the employment of measures against conditions which are injurious to and will produce disease in individuals belonging to the same group. Prophylaxis should be provided for by the nation, state, county and city, and this being the case our national and state boards need to be quickened to a fuller realization of the service they owe to the individuals of this nation. They should endeavor to make the people of the United States a strong people, a happy people and a more useful people; a people whose bodies shall possess such physical resistance to disease as to make them immune to the many diseases that bear on people under ordinary conditions of life. A campaign of health education is being constantly waged, but it should receive a new impetus. This new impetus would be given by the establishment of a health bureau at Washington as a foundation source from which to draw that which would contribute to making people happier, stronger and more useful. Individual prophylaxis belongs directly to the realm of the family physician. One encouraging feature in modern civilization is the general interest which is being aroused in the matter of prevention of disease and death. Organizations composed of both lay and professional men are on the increase, educating people to a realization of the duty they owe to themselves and their neighbors. The demand for, and securing of, pure food and drug laws are some of the fruits of the organized effort that is being made. All advances have been the result of agitation and education among the laity by physicians.

Treatment of Chronic Amebic Dysentery

DR. GRANVILLE S. HANES, Louisville: My remarks relate chiefly to my own experience in the management of chronic amebic dysentery in our own climate. First, the patient is put to bed in a properly appointed room for the sick. He is not required to remain constantly in bed, but rest in the recumbent posture is the attitude that he should occupy chiefly. Second, it is almost a universal practice to make the administration of a purgative the first step in the treatment of these patients. I seldom resort to such a measure. It is my opinion that the nausea, exhaustion and general disturbance to the digestion that such a procedure precipitates is not justified by the results obtained. Third, many patients affected with chronic amebic dysentery are very much emaciated. I have found that this condition is almost always due to an insufficient amount of food. It has long been customary to restrict the patient's diet to a poorly nutritious food in any form of diarrhea. Fourth, it is absolutely inhuman to withhold opium when patients can be so promptly and completely relieved by its use. The relief from the terrible pain, straining and general exhaustion is beneficial to the patient and more than counteracts the ill effect the drug produces. It is much better to give opium when necessary and overcome its constipating effects by small doses of salts or other purgatives. Fifth, internal medication is considered by many to be the most important feature in the treatment of amebic dysentery. The solutions employed in irrigating the large gut for amebic infection are too numerous to mention. Quinin, copper sulphate, silver nitrate, tannic acid and permanganate of potassium are those most frequently employed. They all have the objection of acting as irritants to the mucous membrane when used in sufficient strength to kill and arrest the development of the ameba. For more than a year, I have been using ordinary commercial coal oil for this purpose. Its use was suggested to me on account of its deadly influence on parasites found on domestic animals. The crude petroleum also being used to prevent the development of mosquitoes. After experimenting with it for some time I was surprised to find that it was not irritating to the mucous membrane nor was it absorbed when retained in the gut for twenty-four hours, or even longer. Instead of its effect being that of an irritant it is bland and acts as a sedative to the mucous surface. It will not only remain in the bowel for a long period, but the gut will tolerate larger quantities than it will of water or aqueous solutions of any kind.

I have treated 36 cases of amebic dysentery in the past eighteen months. At one time I entertained the belief that a real amebic infection could never be looked on as being absolutely free from recurring attacks. I have abandoned this belief, and it is now my opinion that many patients are cured in whom the diagnosis was never known. If the infection is superficial and situated low in the gut and is of a very mild type it will yield to treatment with but little difficulty. If, on the contrary, the infection is severe and the disease is extensive in the upper limits of the large gut, the cure is exceedingly difficult, and, so far as we know, it may never be made permanent. In the entire number of patients treated, there was not one who did not show the infection in the rectum and signoid. While it is said that the cecum, hepatic and splenic flexures are the most frequent sites of disease, I cannot believe that this is true. If there is infection higher up in the gut it seems reasonable that the sigmoid and rectum would also become infected when they are the receptacles that constantly retain the drainage from all diseased surfaces above.

Clinical Diagnosis of Amebic Dysentery

Dr. Carl D. Render, Louisville: This is essentially the detention of motile amebas that have been obtained from the intestinal tract. It is usually taught that the stools should be examined for these protozoa. It has been shown repeatedly that this method requires a great deal more time and is much less reliable than that of obtaining the specimen directly from the surface of the ulcer. I never rely on the examination of the stools except in cases in which there is no lesion that may be detected in the rectum or sigmoid. In almost every case of chronic amebic dysentery ulcers are present in the rectum and sigmoid. After one has seen and treated a number of these cases it is with but little difficulty that a diagnosis can be made reasonably certain from the patient's general appearance and the history obtained from him. Motile amebas are sought only to confirm the probable diagnosis. The technic employed in exposing the ulcer and obtaining the specimen requires special attention. Unless the specimen is kept at the proper temperature and spread on the slide in the correct way, failure to detect the amebas will likely result.

Dangers of Animal Tuberculosis to the Public Health

Dr. F. T. Eisenman, Louisville: The unsuspected tuberculous cow is a very serious menace to the public health, and her true condition is seldom known until the tuberculin test is applied. It is then we often find that cows considered to be in the best of health and living under the most sanitary conditions react to the extent of from 5 to 60 per cent. Recently a herd consisting of 90 cows, when tested with tuberculin was found to contain 54 diseased cows and 8 suspicious ones. On Dec. 15, 1908, the Jefferson County Fiscal Court, anxious to determine accurately to what extent milk coming into Louisville was infected with tuberculosis, appropriated $1,200 for the purpose of carrying on the test by guinea-pig inoculation. The partial report of this investigation disclosed the fact that of 119 samples of milk taken from fifty-three dairies of various counties, 39.1 per cent. were proved to be tuberculous. The announcement of this result caused considerable alarm, but as the test was conducted by Dr. Cyrus W. Field, pathologist and bacteriologist of the University of Louisville, an eminent authority on the subject, the accuracy of the test was never doubted. When the attention of the State Board of Health was called to the dangerous character of Louisville's milk supply, a proclamation was issued making it compulsory for all cows in the state to show negative reaction to tuberculin before the milk could be sold. A little over three years ago, the Jefferson County Medical Society, realizing the need of milk on the purity of which the members could depend, appointed a milk commission and it is now possible to obtain a certified milk which meets all the requirements of the society. A low bacterial content is required and freedom from pathogenic organisms. This makes it necessary that every cow shall be tested before entering a certified herd, and once a year thereafter. Dairymen producing certified milk have killed over forty cows that they have purchased for additions to their herds and which have reacted to the test. These dairymen are experienced and felt that they could without fail select cows free from disease. Recently, samples of the certified milk were injected in a large number of guinea-pigs and not one showed tuberculous infection.

In Louisville, of the large number of general hospitals and infirmaries, one only uses milk from tested herds and undoubtedly many patients are infected from tuberculous milk. Millions of dollars are being spent for the cure of tuberculosis and yet the positively known greatest source of human tuberculosis, the tuberculous dairy cow, is being continually ignored and people are constantly being infected, that many more millions of dollars may be spent in their attempted cure. The time is coming when the public will demand of the profession and the health authorities the suppression of tuberculous milk. It is to be hoped that this time will soon come and that prior to it, all the members of the profession, including the health authorities, will be awakened to their responsibilities in the matter.

Diagnosis of Incipient Tuberculosis

Dr. O. W. Rash, Owensboro: The diagnosis of incipient tuberculosis is not difficult to the physician who realizes the prevalence of the disease, who observes the temperature of his patients, who makes a thorough examination of the chest in all suspicious cases, and who uses the tuberculin test with care.

What More Can Our Profession Do To Decrease the Spread of Tuberculosis?

Dr. Jacob Glahn, Owensboro: There are recorded between 6,000 and 7,000 deaths in the State of Kentucky alone during one year, and if we multiply this by five, we have over 30,000 persons ill with tuberculosis at this time, and there is no telling how many more obscure cases exist. This great loss of life, due to tuberculosis, is monstrous and abhorrent, and should not be, for more people die of tuberculosis than the fiercest war has yet destroyed in the same length of time; but in the prosecution of a war, special sums of money are levied to meet the expenses, and for the white plague, which destroys our fellow beings in such an insidious manner, nothing is done by our legislative bodies. Therefore, if the brotherhood of man cannot assert itself spontaneously, and come to the succor of the ill brothers, then the state governments should and must arouse themselves and allow a sufficiency of money under the control of the state boards of health and the various antituberculosis leagues, and municipalities, to establish and carry on simple and ample tuberculosis sanatoria in every county in the state. Every life saved will become a fixed asset, and a useful citizen will be preserved to the state.

Diagnosis and Treatment of General Peritonitis

Dr. John R. Wathen, Louisville: The diagnosis and the differential diagnosis of peritonitis as in many other surgical diseases of the abdomen, are often best made by an early exploratory incision; and much valuable time has been lost waiting for a well-developed case of diffuse suppurative peritonitis before a conclusion was reached, when timely operation would have cured the case, but which later has become almost hopeless. The basic principle in the modern treatment is the prevention or the retardation of absorption of septic material. This is accomplished first, and most important, by the Fowler position before and after the operation and even until convalescence is well advanced, and, secondly, by opening the abdomen to relieve the tension, which so greatly favors this absorption. Ochsner has called attention to the avoidance of food or drink by the stomach, and the application of cold to the abdomen, thus preventing peristalsis and in this way lessening the diffusion of the infective material over the peritoneal surface. All are agreed that rapid operation with a closure of the point or points of leakage is the thing most desired. This closure should be accomplished by the simplest, most rapid and safest method and provided with abundant drainage, for fear of an imperfect stoppage of the leak. This drainage should consist preferably of fenestrated soft rubber tubes and loose gauze packings. It seems now to be the consensus of opinion of the most successful operators that the less we manipulate, wash out or handle the intestines, the better are the patient's chances for recovery. The post-operative treatment consists of introducing continuously saline solution by rectum—protoclysis or enteroclysis. Murphy asserts that it is seldom correctly given, and describes this method practically as follows: The fluid should be administered through a fountain syringe to which is attached a hard rubber or glass vaginal douche tip with multiple openings. The tube should be flexed almost to right angles three inches from its tip. A straight tube should not be used, as the tip produces pressure on the posterior wall of the rectum when the patient is in the Fowler position. The tube is inserted in the rectum to the flexion angle and secured in place by adhesive strips, binding it to the side of the thigh so that it cannot come out; the rubber tubing is placed under the bedding to the head or foot of the bed, to which the fountain is attached. It should be suspended from 6 to 14 inches above the level of the buttocks and raised or lowered to just overbalance hydrostatically the intra-abdominal pressure; *i. e.*, it must be just high enough to require from forty to sixty minutes for one and one-half pints to flow in, the usual quantity given every two hours. The flow must be controlled by gravity alone, and never by a forceps or constriction on the tube, so that when the patient endeavors to void flatus or strain, the fluid can rapidly flow back into the can, otherwise it will be discharged in the bed. It is this ease of flow to and from the bowel that insures against over-distention and expulsion on the linen. The fountain had better be a glass or graded can, so that the flow can be estimated. The temperature of the water in the syringe can be maintained at 100 degrees by encasement in hot water bags. The syringe is refilled every two hours. The tube should not be removed from the rectum for two or three days. When the nurse complains that the solution is not being retained, it is certain that it is not being properly given; even children tolerate proctoclysis surprisingly well.

Treatment of Compound Fractures

DR. J. G. CARPENTER, Stanford: Shock must first be treated and the physicomental state of the patient considered. Then the flesh wound, bone wound and the field of the wound should be thoroughly cleansed and hemorrhage arrested. The wound being asepticized, I reduce the fracture, with or without drainage, as the case may demand. There should be complete coaptation of the fractured ends with immobilization of the fracture; if necessary, with bone rings, bone pegs, silver wire or chromicized catgut ligatures. In compound comminuted fractures, the fragments should be fastened together or to the shaft. We should remove the detached fragments of bone, cleanse and place them in a 1/1000 or 1/2000 bichlorid of mercury solution, then in a warm saline solution at the temperature of the blood, and transplant them into the wound. We should resort to drainage, if necessary, and apply an antiseptic dressing. The fractured bone should be immobilized at the proximal and distal points, with proper springs and extension and counter-extension, with complete rest of the limb.

Management of Burns

DR. C. C. GARR, Lexington: There are two general classifications of burns: First, in regard to depth—first, second and third degree. Second, in regard to cause—(1) flame; (2) hot or molten metal; (3) steam; (4) electricity; (5) chemical; (6) *x*-ray. Constitutional treatment is, at first, most important. It is very essential to relieve pain and combat shock. In doing this morphin, atropin, adrenalin chlorid and proctoclysis are serviceable. For the local treatment, I prefer the old-time carron oil as it relieves the pain and hastens, but does not increase, sloughing. Picric acid and other applications may be used. After the granulations are healthy the only rational thing is skin-grafting. I use a modified Thiersch graft, employing an air dressing.

The Social Evil

One evening was devoted to a discussion of the social evil. Dr. C. H. Vaught, Richmond, discussed the cost of venereal peril from the standpoint of the general practitioner; Hon. R. W. Bingham, Louisville, discussed it from the viewpoint of the lawyer; Rev. E. L. Powell, Louisville, from the standpoint of the minister, and Mr. J. H. Hager, Louisville, from the standpoint of a superintendent of police. A general discussion followed.

Book Notices

ETUDES ANATOMO-CLINIQUES: COEUR—VAISSEAUX—POUMONS. Par le Dr. Raymond Tripier, Professeur à la Faculté de Médecine de Lyon. Paper. Pp. 604, with illustrations. Price, 10 francs. Paris: G. Steinheil, 1909.

The author endeavors to explain the phenomena and causation of the diseases which he considers, by the anatomic conditions which develop and characterize them. The subjects which he discusses are endocarditis, syphilitic aortitis, atheroma of the mitral valves, arteriosclerosis, the rôle of the circulation of the blood in determining lesions, emphysema or hypertrophy of the lungs, pleural adhesions, reciprocal relations of affections of the heart and lungs, initial lesions of pulmonary tuberculosis. These chapters are illustrated by thirty-two figures which are well drawn and are an addition to the text.

In the chapter on arteriosclerosis Tripier discusses the views of other authors, most extensively and most critically those of Huchard, with whom he does not agree. He considers the distinctions which many make between arteriosclerosis and atheroma, but has nothing to add to what is generally known of the causation of the arterial lesions. The frequent association of arteriosclerosis and sclerosis of the kidneys and the common notion of a relationship of cause and effect lead to a general discussion of scleroses, which, Tripier says, "are composed of new tissue of an inflammatory origin." Moreover, he writes further on, "one never sees an arteritis of small arteries more or less extensive preceding the production of the inflammatory lesions, as would be expected if there was an initial causative endoarteritis." Sclerosis is more or less variable in different organs, owing to their varying structure as well as to the age of the subject affected, his habits and his antecedents. It does not suffice to invoke an arterial lesion more or less generalized to explain these diverse changes in organs.

Of the heart lesions in Bright's disease Tripier considers at some length those with and those without sclerosis. This chapter is somewhat polemical, and while in it the nature of arteriosclerosis and of the associated lesions in various organs is discussed, the clinical aspect and the anatomic details of the lesions are not. The author endeavors to establish his own views on observed facts and to avoid the hunt for facts to maintain a hypothesis as so many authors do.

An analysis of each chapter cannot be made here, but what has been said of this one will illustrate the author's method of thinking, though the others deal more with diseases and less with theories than does this one.

CARE OF MOTHER AND CHILD. By Clarence M. Cheadle, M.D., Member American Medical Association. With an Introduction by Charles Edwin Ruth, M.D., formerly Professor of Surgery and Anatomy, Keokuk Medical College, now of Ponce, Porto Rico. Cloth. Pp., 354. Price, $2. Published by the Author, Ashton, Ill., 1909.

Dr. Cheadle has felt the need, as have many other physicians, of a simple, concise, not too technical little treatise that could be placed in the hands of an expectant mother to give her an intelligent idea of the pregnant state, how to conduct herself during this time, how to prepare herself for the important coming event, and how to meet the great obligations that have been placed on her after the baby is born. To meet this need he has prepared the book before us. Dr. Cheadle addresses himself throughout to the mother and rarely forgets himself, as is so commonly done, to introduce prescriptions, formulas and other technicalities. Part I is devoted to the mother, the changes that occur during pregnancy, its signs, symptoms and complications, the preparation for confinement, the event itself and the after-care and convalescence. Part II deals with the baby, its care and hygiene, growth and development, natural and artificial feeding, and its common nutritional disorders. Part III deals with the common diseases of children, giving the mother an idea of their cause and nature, and of the general principles of treatment. The part dealing with infant-feeding is especially noteworthy for the author's familiarity with newer ideas and their exposition. We hope, however, that in a subsequent edition even the few tables for infant-feeding that he gives will be omitted and that the expression "colorimetric method" will be avoided, for even healthy babies cannot be fed by a table or by a "method."

The work has evidently been a labor of love and has a commendable ring of earnestness and of purpose. There is a need of missionary work on the subject of puerperal mortality and morbidity, of criminal abortion and infant mortality. Dr. Cheadle feels his responsibility and meets it in the true spirit. To quote from the preface: "The number of women who die from puerperal causes is so great that it appalls the one who stops to consider. And still the tide of death flows on and few are the hands put forth to stay it. Here is one feeble hand put forth. It is hoped that it may gather in a few from the black tide and restore them again to the places among their children and husbands." The physician will find nothing new in the book, but to the mothers and expectant mothers for whom it was written it can be warmly commended.

The Development of the Chick. By Frank R. Lillie, Professor in the University of Chicago. Cloth. Pp. 472, with illustrations. Price $4. New York: Henry Holt & Co., 1908.

An essential requisite to the understanding of anatomy, either human or comparative, is a thorough appreciation of the facts and processes of embryology. This subject has been taught by laboratory methods in our colleges of liberal arts and sciences for only three decades, and in our medical schools, with a very few exceptions, the laboratory teaching of embryology has been introduced within the last decade. Owing both to the availability of material and also to the fact that the text-book of Foster and Balfour was, for two decades, the only book available in embryology, the greater part of the laboratory teaching of embryology, until very recent years, has been on the chick, and therefore this form has come to be a classic. Now, however, especially in the medical schools, mammalian material is more and more used to illustrate the facts of embryology. For certain phases of development, however, the chick is still a favorite form, and therefore it is of interest to the medical profession to note the appearance of this excellent work, giving a logical and exhaustive treatment of the devlopment of a single animal. In the earlier part of the book the author discusses some of the more general problems of embryology and then takes up the various fundamental processes of the early development of the chick. This is followed by a discussion of the differentiation of the several organic systems. The discussion does not aim to be comparative; Professor Lillie confines himself almost entirely to the phenomena that occur in this one animal and goes into accurate detailed description of this limited subject.

The book is rather too extensive to serve as a text-book for beginners, and especially for beginning medical students who wish to devote some time, at least, to mammalian embryology. The book, however, will be found of the greatest value for reference, and every teacher of embryology must constantly consult it. It will furnish excellent and interesting reading for the student after he has made some headway in embryology. It will serve to stimulate the interest of the practitioner and to give a view of recent advances in this limited field. The accuracy and conservation of the statements in the book may be relied on. The book has excellent and well-selected illustrations, many of which are new. The work of the publishers has been very well done so far as the printing and binding are concerned, but the impressions of some of the figures are not entirely successful. The appearance of this book is of distinct value to the advance of medicine, since it will serve to stimulate the production of a better text-book in mammalian embryology than we now have. From the point of view from which it was written—that is, as a carefully balanced and well digested exposition of our present knowledge of the embryology of this one animal—the book is successful.

Miner's New Complete Obstetric Record. Improved Edition, Giving all Medical Data Bearing on the Problem of Heredity. Cloth. Pp. 124. Copyright, 1883, by Joel A. Miner. Ann Arbor, Mich.: Joel A. Miner.

This book is something in the nature of a ledger, and contains space for the personal history of the father and mother, the history of the labor, description of the child and general remarks regarding the puerperium. It should be of value not only to obstetricians, but to physicians in general practice, as it is an adequate means of keeping complete obstetric records.

Arbeiten aus dem Pharmazeutischen Institut der Universität Berlin. Herausgegeben von Dr. H. Thoms, Professor und Direktor des pharmazeutischen Institutes der Universität, Berlin. Vol. VI. Comprising the work for 1908. Cloth. Pp. 304, with 4 illustrations. Berlin: Urban and Schwarzenberg, 1909.

Dr. Thoms is a corresponding member of the Council on Pharmacy and Chemistry of the American Medical Association and his work in the investigation of synthetic remedies, secret preparations, and other chemical matters of interest to the medical profession is too well and favorably known to need comment. The volume contains reports of investigations of medicines, foods, technical products, colonial products, etc., as well as reports of much original work in pure and applied chemistry. In the section devoted to medicines we have the work of Zernik on the most important new remedies of the year 1908 and investigations of secret remedies by various workers. The work on the new remedies is of vast importance. It puts before the profession an account of the composition and properties of the new synthetics from a disinterested source. References to the literature are appended. An idea of the prolific character of chemical industry is afforded by the list of new remedies for the year which includes 61 titles, of which 14 have been specially investigated in the department. The need of continual watchfulness over accepted remedies is shown by the results obtained by Zernik in studying theobromin preparations; he found that a sample of the theobromin sodium acetate contained less than 40 per cent. of the theoretic amount of theobromin and a sample of theobromin sodium salicylate only 70 per cent. of the theoretic quantity of theobromin.

The Great White Plague: Tuberculosis. By Edward O. Otis, M.D., Professor of Pulmonary Diseases and Climatology, Tufts College Medical School. Cloth. Pp. 321. Price, $1.00 net. New York: Thomas Y. Crowell & Co.

This book is written for the layman and contains the facts concerning tuberculosis, its causation, symptomatology, curability and treatment, its prevention and the world-wide crusade against it. The language is simple and an attempt is made to bring the chief facts regarding the disease within the comprehension of the ordinary layman, while making no attempt to encroach on the proper field of the physician. The book ought to have good influence in helping in the campaign against tuberculosis.

Third Report of the Wellcome Research Laboratories at the Gordon Memorial College, Khartoum. Andrew Balfour, M.D., B.Sc., F.R.C.P., D.P.H., Director, Fellow of the Royal Institute of Public Health. Cloth. Pp. 477, with illustrations. Published for Dept. of Education, Sudan Government, Khartoum, by Bailliere, Tindall & Cox, 8 Henrietta St., Covent Garden, London, 1908.

This handsome volume is nearly twice the size of its predecessor, which was issued in 1906. The report includes the work of the staff of the laboratories and also a number of papers prepared by other authors who have done work in the laboratories. Prominent among these papers is one by El Bimbashi Hassan Effendi Zeki describing "The Healing Art as Practiced by the Dervishes." This gives an account of the native medicine before the country came under British control and shows a marked contrast with the modern scientific methods now in vogue. The method of amputation was to draw the limb through a hole in the wall and sever it at one stroke with a sharp sword. The stump was then plunged in boiling oil which checked hemorrhage and the limb was bandaged with calico. This article is supplemented by notes contributed by other authors. An account of trypanosomiasis in the Anglo-Egyptian Sudan is given by the director, Dr. Balfour. There are some interesting and valuable contributions in the field of entomology. A description of the poisonous snakes of the Anglo-Egyptian Sudan is given by Dr. Franz Werner. Helminths are discussed by Robert T. Leiper, M. B. A large section is occupied with the anthropologic results of an expedition made by Mr. A. M. Pirrie, who unfortunately died before he was able to finish his work. The report of the chemical laboratory, in addition to other valuable work, takes up the results of a study of the various gums of the Sudan and their origin, which is now believed to be microbic. The work is handsomely illustrated and will be of special value to those interested in tropical medicine.

CHILDREN IN HEALTH AND DISEASE. By David Forsyth, M.D., D.Sc., Physician to the Evelina Hospital for Sick Children. Cloth. Pp. 362. Price, $3. Philadelphia: P. Blakiston's Son, & Co., 1909.

It has been a pleasure on several occasions in the past few months to comment with especially favorable emphasis on books on children by English authors, notably those of Thompson and of Still. To this the present volume is no exception. The object of the book is to present a concise but comprehensive picture of child life in health and disease, which Dr. Forsyth says, can be seen in its proper perspective only "when we take up our position at the meeting-point of the many sciences that are concerned in the development and welfare of the young." He deals thus in turn with the physiology, psychology, school hygiene and training of the young, with idiocy and feeble-mindedness, infant mortality, children and disease, the examination, diagnosis and some points in the treatment of sick children. The idea is undoubtedly a good one and has been consistently and masterfully carried out—but the space between covers is too small, and under such circumstances the "Psychology of Children," and "Examination of the Vomit and Feces," come so close together that the effect is rather jarring. With so luminous and scholarly an author, one can not help but feel that a more satisfactory book would have been produced if the purely medical chapters on disease had been omitted. and the rest correspondingly expanded. The unity of the book that the author aims at is rather destroyed by bringing in strictly medical technicalities, thus giving the whole a sort of encyclopedia-of-child-life effect.

The book will appeal especially to medical men who are interested in all that pertains to children, and not merely in their ailments, and to the ever-increasing number of intelligent mothers who are looking for help in bringing up their boys and girls to the highest possible standard. Both can well omit the last few chapters, and both will be well repaid for assimilating the rest. The book itself has an appropriately dignified appearance and one is especially favorably impressed by the large, clear type and the restful effect of the thick, cream-colored paper.

AGRICULTURAL BACTERIOLOGY. By H. W. Conn, Ph.D., Professor of Biology at Wesleyan University. Second Edition. Pp. 331, with 64 illustrations. Cloth. Price, $2.00, net. Philadelphia: P. Blakiston's Son & Co., 1909.

The second edition of this well-known work has been revised and somewhat enlarged, but the general treatment has not been materially altered. Many interesting topics are discussed and the book contains information likely to be of a good deal of value to the scientific farmer. The style of writing is on the whole clear, but embellished by too many expressions such as "the disease side of the bacteria story," page 3, and "a little thought will show us," page 55. Not a few errors of fact have crept into the text, as, for example, the statement on page 130 that the presence of *B. coli* in a sample of water "indicates a certainty of danger." Again on page 282 we are told that the spores of the anthrax bacillus will "resist a temperature of about 280 degrees F. for two or three hours." The book, however, is likely to hold the place it has already made for itself in spite of these and other blemishes.

HEMORRHAGE AND TRANSFUSION. By George W. Crile, A. M., M.D., Professor of [illegible] ern Reserve Medical College. Cloth. Pp. [illegible] Price, $5.00. New York: D. Appleton & Co., [illegible]

These papers by Crile and his associates present the data and results of the work of eleven years in research and clinical observation. Much of the material has been previously published, but the convenience of the reader or investigator has been well served by the collection in compact form, with the most complete details, of this large mass of experimental and clinical experience. The literature of the subject is thoroughly considered. Dr. Crile has analyzed the evidence of his own experience and that of others in the most thorough and logical fashion, covering every point, so that, so far as information on these subjects is obtainable, his conclusions represent the most scientific views of to-day. The technic of transfusion is clearly presented and by the improved method of the author reduced to the simplest and most practical form. The book, though large, will amply repay careful study.

Miscellany

Twelfth International Congress on Alcoholism

Dr. Reid Hunt (*Pub. Health Rep.*, Oct. 8, 1909, xxiv. No. 41) reports his observations as delegate to the Twelfth International Congress on Alcoholism held in London, July 18 to 24. Among the great variety of subjects discussed at the scientific sessions were the effect of alcohol on immunity, heredity, muscular and mental energy, its relation to tuberculosis, insanity, nervous diseases and therapeutics. The consensus of opinion of the speakers seemed to be that alcohol, in any form, is seldom of distinct value in the treatment of disease; and some evidence was brought forward to show that alcohol even in moderate amounts has an unfavorable effect on offspring and has a tendency to lower resistance to infection.

The statements frequently made that alcohol is, *per se*, a predisposing factor to tuberculosis received some but not marked support from an elaborate statistical study by Henschen of Sweden.

In discussing a paper by Mr. Wilbert on the alcoholic beverages in the different pharmacopeias Hunt called attention to the fact that only the United States and Greek pharmacopeias include whisky, and suggested that its recognition by these pharmacopeias gave it an undue prominence as a medicinal agent; also that wine is very undesirable as a pharmaceutical agent and that the preparations made with it should be discarded from the Pharmacopeia.

One of the most important of the general meetings was devoted to the subject of alcohol and the efficiency of the national services, at which representatives of the naval, military, postal, railway and legal professions spoke. The extraordinary growth of total abstinence in the British army and navy was especially emphasized; 40 per cent. of the army in India are total abstainers. This growth of total abstinence in the army was attributed to a very considerable degree to the improvements that have been made in the surroundings of the soldier, such as improved housing and food. One speaker pointed out the need of giving much more attention to the physical welfare of the sailors of the merchant marine. The unhygienic conditions under which many of them live were held to be the chief cause of their intemperance and the deterioration caused by these factors (intemperance and lack of hygiene) was called a national danger.

Other features of the congress are described in some detail by Cora Frances Stoddard (*Survey*, Oct. 9, 1909, xxiii, 81).

Dr. T. Laitinen, professor of hygiene at the University of Helsingfors, reported studies in human families which confirmed his long and careful observations on animals, and which showed that the birth-weight and subsequent eight months' development of children of drinkers averaged less in a group of over 20,000 than in the case of children of non-drinkers. Poorer hygienic conditions in home and care afforded by the drinking parent, as well as the alcohol itself, undoubtedly had an influence in producing these results.

Dr. Karl Graeter, a nerve specialist of Basel, Switzerland, gave statistics showing that from 9 per cent. up of the children of moderate drinkers investigated were mentally defective or tuberculous, and from 17 per cent. up of the children of heavy drinkers, as against 5 per cent. of the children of abstainers.

The discussion on alcohol and crime, of course, reinforced the evidence of years as to the close relation between crime and drink. The lord chief justice of England, Lord Alverstone, declared that after forty years at the bar and ten years as a judge, he had no hesitation in saying that in 90 per cent. of the crime in England, drink was a factor. Lieutenant-Colonel McHardy of Edinburgh stated that in Scotland in 1907, there were about 90.000 cases of public disorder due to drink.

The rational explanation of these statements was given by Dr. Legrain of Paris, who said: "Alcohol produces an intoxication which is only a brief attack of lunacy. There is no other term which describes the almost instantaneous disorders which impair the judgment, the reason, and exactitude of sensation, and which destroy the will only to install brute impulse in its place."

Sir Thomas Whittaker, as president of one of Great Britain's largest life-insurance companies, stated that their nonabstainers were so carefully selected that the mortality was less than in other societies. Even then, the records of the company showed a difference in favor of the abstainers of from 25 to 30 per cent., showing their better health and longevity.

Practical dealing with the alcohol problem in the light of the discussions of this congress resolves itself into the essentials of all social reform: popular education as to the perils involved, inculcation of respect for individual and community good, elimination of sources of temptation as rapidly as possible; cure of the victims if attainable; if not, isolation for the sake of public order and public welfare.

Gastroenterocolitis in Infants.—H. B. Sheffield (*Merck's Archives*, July, 1909) is inclined to regard the various gastrointestinal disturbances usually described as "gastritis," "enteritis," "colitis," "gastroenteritis" and "enterocolitis" as mere stages of one and the same pathologic condition, and discusses the subject in question from this point of view. Occasional vomiting and diarrhea, occurring as a result of unusual overloading of the stomach, too hasty feeding, ingestion of indigestible articles of food or foreign bodies, exposure to sudden atmospheric changes and undue excitement, etc., are not rarely observed in otherwise apparently healthy, well-nourished children, and if of brief duration are of no special clinical significance. These attacks may even be accompanied by fever, mild cerebral irritation, colic, etc., and yet remain outside the domain of pathology, or represent an affection which is generally spoken of as simple indigestion or the first stage of *gastroenterocolitis. The second stage of gastroenterocolitis* is generally described as gastrointestinal catarrh or dyspepsia.

Ordinarily, these manifestations set in insidiously, and if not promptly arrested grow worse gradually, arousing little if any anxiety on the part of those in charge of the baby, or are lost sight of, sometimes because of coincident "teething" (with the laity the presumptive cause of all ills) until there is a sudden aggravation of the condition—supervention of the third stage of the disease. In this stage gastroenterocolitis assumes a very acute course. It is manifested by violent vomiting, excessive thirst, frequent, thin watery, brownish, greenish and later colorless or blood-stained stools. The vomitus is acid in reaction, bile-stained and offensive in odor. The bowel movements vary from 10 to 15 in twenty-four hours, and are followed by griping pain and tenesmus. The child is very restless, feverish, sleepless, and, with the symptoms persisting a few days, rapidly loses in weight, and sinks into a state of collapse, followed by convulsions, coma and death.

Closely allied to the gastroenterocolitis just described (though possibly differing as to the exciting micro-organism), and most probably representing only a severer "fulminating" form of the same disease, is the so-called infantile "summer complaint," or cholera nostras infantum. To prevent the graver forms of gastroenterocolitis, promptly remove the causes and effects of the mildest symptoms of the disease. Attention to every detail of rational feeding and personal hygiene are the surest means of prevention. The active treatment should begin with the earliest inception of the gastrointestinal disorder. Regulation of diet is the most efficient therapeutic measure, and is almost invariably attended by improvement in the child's condition, if the treatment is begun with a few hours' starvation of the patient and prompt cleansing of the alimentary tract of its obnoxious contents. Feeding, breast or bottle, should at once be suspended until such time as exigencies for resumption of feeding will demand. In the meantime, especially in the absence of strong contraindications, such as violent vomiting, the infant should receive small quantities of hot or cold, pure water, or a light infusion of black tea. Recurrent vomiting calls for prompt attention. Ordinarily, vomiting can be controlled by "ice-sand," minute doses of calomel with or without bicarbonate of soda or bismuth; bismuth or cerium oxalate; tincture of iodin (in 1/30 drop doses, to be repeated every hour or two); silver nitrate (1/100 gr.); a sinapism to the spine or epigastrium, and, if all else fail, lavage. Lavage should be supplemented by enteroclysis, and, with the vomiting checked, also by a small dose of castor oil. Where diarrhea persists, an astringent mixture like the following is useful:

℞.	gm. or c.c.	
Bismuthi subcarbonatis		
Misturæ cretæ comp.		
Syrupi rhei aromatici		
Glycerini		
Aquæ menthæ piperitæ ... āā	8	ʒi
Aquæ destillata	60	ad. ℥ii

M. Sig.: One teaspoonful every two hours for a child one year old.

The camphorated tincture of opium may be added for the relief of pain. After complete cessation of vomiting, resume feeding, first with small quantities of toast or barley-water, and several hours later diluted cow's milk or breast milk.

In fulminating attacks of gastroenterocolitis, the treatment must be prompt and more heroic. In the initial, febrile stage, after a single but thorough irrigation of the stomach and bowels, the patient is given 1/50 gr. of morphin and 1/500 gr. of atropin hypodermically, is wrapped in warm blankets and sent outdoors. In the algid stage powerful stimulation is in order. Thus a hot bath with brisk rubbing of the body, a hot high enema (injected slowly so as to be retained), hot water by mouth, hypodermic administration of sterile camphorated oil (8 drops of a 15 per cent. solution); strychnin 1/60 to 1/30 gr.; caffein sodium benzoate 1 gr.; or whisky 20 gtts., and hypodermoclysis (1 to 6 oz. of a 0.6 per cent. hot sterile salt solution). As the patient improves, a milder course of treatment is resorted to. Convalescence usually proceeds at a very slow pace, and is frequently interrupted by milder exhibitions of gastrointestinal indigestion, which, if not promptly yielding *to energetic treatment, eventually lead to chronic involvement* of the alimentary tract.

The course of chronic gastroenterocolitis varies in individual cases. At best, the prognosis is very grave (50 per cent. mortality), especially so in infants reared under bad hygienic conditions and in want and misery, and in those born with lowered vitality and congenital constitutional defects. The patient should be removed from the insanitary surroundings and intrusted to the care of some one who would obey orders. Regulation of diet is most essential. A complete cure of gastroenterocolitis in young infants is frequently effected by a prompt change from bottle to breast feeding. The medicinal treatment of chronic gastroenterocolitis is chiefly symptomatic.

Prophylaxis of Recurring Headaches.—H. Hirsch refers to what he calls "habitual headaches," and declares that people are educated into the headache habit unconsciously in many cases, and that effectual prophylaxis is possible. When children see how everything in the household bends on the days when "mother has one of her headaches," they learn to ascribe great importance to headache in general, to seek for it in themselves, and to magnify the slightest ache into "inheritance of mother's tendency to headache." They are thus educated into the headache habit. He sees another factor in the peculiar condition of semiwakefulness as one starts to wake in the morning. This is a close approach to the hypnotic sleep, he says, and the individual actually hypnotizes himself during this intermediate phase between sleeping and actual waking. Who has not had the experience, he exclaims, during this stage of semiwakefulness that the cares of the preceding day come back to the mind with depressing gloom—mole-hills are magnified into mountains and mere possibilities of trouble into malign certainties. If the memory of a headache in the past crops up during this period of semiwakefulness, the dread of the headache hypnotizes the mind into accepting a headache as an actual fact. Massage of the head is liable to induce a kind of semihypnotic condition, against which he expressly warns, and he also advises means to ensure rousing and waking completely as soon as one wakes to semiconsciousness. In his communication on the subject in the *St. Petersburg. med. Wochenschrift*, September 25, he urges the family physician to instruct parents to refrain from paying too much attention to the little aches and pains of their children, and also to tell the parents that—for their children's sake—they must give up the right to their own headaches, that is, they must rise above them, not yield supinely to them.

Medicolegal

Validity of Contract of Assistant Not to Practice in Same Place After Termination of Employment

The Supreme Court of Colorado had, in Freudenthal vs. Espey (102 Pac. R. 280), a suit brought by the latter party, its first case for decision involving the question of the validity of such a contract as the one there, whereby the defendant, employed as the assistant of the plaintiff, agreed that on the termination of his employment he would cease "the practice of medicine, surgery or obstetrics or the branches of either," directly or indirectly, in the city, a place of about 10,000 inhabitants, for a period of five years.

Such contracts, the court says, must have an actual consideration appearing from or in the contract, or, at least, set forth in the complaint. What is termed a legal consideration is sufficient. It will not be inquired whether or not it is adequate, or, in other words, equal in value to the restraint agreed on. Nor will the court inquire whether the defendant in submitting to the restraint made a judicious contract.

In this case the consideration on which the defendant entered into the contract as expressed therein was "the salary and compensation" which would inure to him by reason of the employment and association. The salary was $125 a month. Then there were mutual promises to be performed which were the consideration for each other. The plaintiff was to introduce the defendant to his patients and friends, furnish proper conveyances, and in return the defendant was to exert his skill and attend to the professional business of the plaintiff and "earnestly endeavor to increase and built" it up. It was certainly of great benefit to the defendant, an inexperienced professional man, to be associated with a capable and efficient member of his own profession, long experienced, and enjoying an extensive practice. The public were likewise benefited, locally, in having the inexperienced practitioner under the direction of, and guided by, one skilled in his profession, and equally so would the public elsewhere be benefited when he engaged in his profession for himself. The court is clearly of the opinion that the facts of this case disclosed a sufficient legal consideration.

Taking up the next question of whether the contract was reasonable, the court says that agreements like this must be construed with reference to the objects sought to be attained by them. The object here was the protection of the plaintiff against competition in his profession. The nature of the business to protect was a medical practice extending far beyond the limits of the city. He possessed this business and the knowledge and the skill that enabled him to acquire it. Certainly in limiting the restriction to the city and for the period of five years was only affording a fair protection to the interests of the party in favor of whom it was given, and not so large as to interfere with the interests of the public. The restraint was no larger than the needs of the plaintiff required. It was of material benefit to him and was not oppressive on the defendant, nor was it in any sense injurious to the public. The contract was in no wise forbidden by any principle of policy or law. The defendant could be as useful to the public at any other place as in the city in question, and the interests of the community elsewhere were as important as they were there. Here the defendant had no business, was inexperienced and presumably unskilled, and desired and sought the benefits that would accrue to him by association with one so learned and skilled in his profession as the plaintiff. It is a known fact that professional skill, experience, and reputation constitute part of the individuality of any particular person, and the amount of business which such person does depends largely on the confidence reposed in him personally as a professional man. Under such circumstances it is not to be presumed that one whose personal excellency and skill have brought him a profitable business will take another in, and by vouching for such other's skill and honor endear him to his own patients and leave such other free to steal away his profits.

The circumstances under which the defendant entered into the employ of the plaintiff here were such as to justify the latter in asking him to enter into some agreement of the nature of that involved in this suit. It was of importance to the plaintiff to exact of the defendant a covenant which would prevent him on the termination of the service for utilizing the knowledge and experience he had gained by such service in destroying the plaintiff's business. It was reasonable and proper. Besides, the court is not disposed by judicial decree to render it practically impossible for the unlearned to better their condition, and become skilled in a trade or experienced in a profession, by means of proper apprenticeships, as it would do, were it to declare this contract void. Few professional men would take assistants and intrust them with their business, impart to them their knowledge and skill, bring them in contact with their clients and patients, unless they be assured that the knowledge and skill imparted and the friendships and associations formed would not be used, when the services were ended, to appropriate the very business such assistants were employed to maintain and enlarge.

A distinction exists between that class of contracts binding one to desist from the practice of a learned profession and those which bind one who has sold out a mercantile or other kind of business and the good will therewith connected, not to engage again in that business. In the former class there should be a reasonable limit as to time so as to prevent the contract from operating with unnecessary harshness against the person who is to abstain from practicing his profession at a time when his so doing could in no wise benefit the other contracting party. In the latter class such limit is not essential to the validity of the contract, but the restraint may be indefinite. The contract in this case met the requirements of this rule.

Entertaining these views, the court affirms a decree in the plaintiff's favor, enjoining the defendant from doing what he agreed not to do.

Validity and Construction of Illegally Limited License—Right to Verification License

The Court of Civil Appeals of Texas says, in Board of Medical Examiners of Texas vs. Taylor (120 S. W. R. 574), that the board refused Mrs. Taylor's application for the verification license required by the medical practice act of 1907 to practice medicine, tendering her instead one to practice "obstetrics only." This was based on the fact that her original license, issued by a district board of medical examiners in 1889, used the words, "branches of obstetrics and diseases peculiar to women and children." But the district board certified that it had examined the applicant "as required by the laws of the State of Texas," and was "satisfied" as to her "qualifications," while it was duly established that from such time she had been a legal and regular practitioner of medicine, in general practice in the state.

Under these circumstances, the court considers that she was entitled to a writ of mandamus to compel the issuance of a verification license "to practice medicine," without the limitation sought to be imposed on her. It says that it does not think that in the facts admitted and by giving proper effect to the entire language of the certificate that the words in the certificate, "branches of obstetrics and diseases peculiar to women and children," were intended, or should be so construed, by the board to declare that they were not "satisfied" as to the applicant's qualifications in the requirements of the law. If the board intended by the words just mentioned to designate in the certificate the branch or department of medicine that she was to practice, any such designation would have no legal force or effect, would be surplusage, and would not affect her legal rights in the premises. So the fact, appearing from the certificate and admitted, that she appeared before the board, not as an applicant to practice midwifery or obstetrics only, and bearing in mind that the board was not authorized to give certificates "to females practicing midwifery exclusively," and it appearing that the board intended to and did act within its legal authority, it follows that the court would not be justified or warranted in construing the certificate in question to be a certificate intended to certify the right to practice obstetrics only.

Holding as the court does, that the legal effect of the certificate granted to the applicant by the district medical board was to authorize her "to practice medicine under the laws at the time in force, it follows that she was entitled to a verication license at the hands of the state board as broad as the legal effect of her certificate, which, by force of the law, was "to practice medicine." The duty of verification imposed on the state board by the law is to confirm or substantiate something already done. The power involved in the verfication extends to the ascertainment of the genuineness and valid existence of the license previously by law granted by authorized board, and the identity of the person claiming and presenting the same, there being no cause as defined in section 11 of the act authorizing a refusal to issue.

Current Medical Literature

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

November 13

1 *Diabetic Coma: Is It Due to Acidosis? H. S. Stark, New York.
2 *Treatment of Amebic Dysentery. W. E. Deeks and W. F. Shaw, Ancon, Canal Zone.
3 Surgical Treatment of Severe and Late Cases of Amebic Dysentery. A. B. Herrick, Ancon, Canal Zone.
4 *Pathogenesis of Tabetic Arthropathies Based on an Anatomic and Clinical Study of Two Cases. A. Gordon, Philadelphia.
5 *Six Hundred Cases of Heart Disease. J. N. Hall, Denver.
6 Twenty Cases of Pulmonary Tuberculosis without Bacilli in the Blood. L. Rosenberg, Bedford Station, N. Y.
7 Wrist Support for Sphygmographic Tracing. D. Felberbaum, New York.

1. **Diabetic Coma.**—Stark is opposed to the assumption that the coma is due to acidosis, because: 1, A decided acetonuria occurs in the course of numerous diseases of widely different characters, *e. g.* gastrointestinal disorders of childhood (cyclic vomiting), acute yellow atrophy of the liver, eclampsia, pernicious vomiting of pregnancy, intoxications from metals and anesthetics, etc. 2, Acidosis may occur in health on a continuous sugar-free diet, and also during physiologic starvation, and during inanition from wasting disorders, such as carcinoma and tuberculosis. 3, Adyspneic coma, not unlike true diabetic coma, is encountered in other diseases than diabetes, such as measles, scarlet fever and typhoid. Save for the presence of dextrose in the urine, these comas could not be clinically differentiated. 4, Diabetic coma may occur without acidosis, but with a large ammonia excretion. There are quite a number of such cases recorded in literature and they have an important bearing on the question of the origin of coma. 5, Alkali therapy has been notoriously a failure, either as a prophylactic or as a curative measure. Stark believes that the failure of alkali medication, either to abort or to tide the patient over an attack, seals the fate of the acidosis theory.

2. **Treatment of Amebic Dysentery.**—The rest-supportive treatment, consisting of rest in bed, a milk diet, the use of mild irrigations and bismuth subnitrate in heroic doses, has given Deeks and Shaw by far the most satisfactory results. Surgical interference, they say, is indicated if improvement does not rapidly follow the above-mentioned method.

4. Abstracted in The Journal, July 31, 1909, page 405.

5. **Heart Disease.**—This is an elaborate statistical analysis of the subject.

Boston Medical and Surgical Journal

November 11

8 The Dysentery Epidemic at Danvers Hospital in 1908. C. T. Ryder, Boston.
9 Investigation of Possible and Probable Sources of Infection and of Causes of Spread of Dysentery in Danvers Hospital. C. T. Ryder, Boston.
10 Identification of Epidemic Dysentery in Danvers Hospital as Due Mainly to *Bacillus* [illegible] Richards, A. H. Peabody and M. M. [illegible]
11 [illegible] in Danvers [illegible] parative and [illegible] Strains of [illegible] Sh[illegible] E. T. F. Richards, Boston.
12 [illegible] e in Bacillary Dysentery. M. M. Canavan, Boston.
13 The Lesions of Bacillary Dysentery. E. E. Southard and E. T. F. Richards, Boston.
14 The Nervous System in Bacillary Dysentery. E. E. Southard and C. G. McGaffin, Boston.
15 Ulcerative Vaginitis in a Case of Bacillary Dysentery. M. M. Canavan, Boston.
16 Occurrence of Dysentery in Hospitals and in the Community at Large, with a Summary of Prophylactic Measures which Should be Employed to Check the Disease. C. T. Ryder, Boston.
17 Conclusions from Work on the Danvers Dysentery Epidemic of 1908. E. E. Southard, Boston.
18 *Vaccine Treatment of Lobar Pneumonia. T. Leary, Boston.
19 Immediate Results and Surgical Complications of Gastroenterostomy. F. T. Murphy, Boston.
20 Physiologic Aspects of Gastroenterostomy. W. B. Cannon, Boston.

18. **Vaccine Treatment of Lobar Pneumonia.**—Believing that the data obtained from the treatment of cases of alcoholic pneumonia would at least be suggestive, Leary appealed to several medical groups to test the value of vaccine on the alcoholic and extreme cases. Pneumococcus vaccine was furnished for the treatment of 34 patients of this type, of whom 6 died (17.7 per cent). In a larger series of cases of ordinary pneumonia (49), 15 per cent. came to crisis in three days, and but 2 deaths were reported. The total deaths for the series of 83 cases were 8, or 9.7 per cent. It was noted by most observers that rapid relief of toxemic conditions, which were present in serious cases, followed the use of vaccine, and in cases of uncontrollable delirium an abatement of the delirium was prompt. The results are encouraging enough, Leary believes, to justify the wider application of this treatment. For the purpose of obtaining data from a sufficient number of cases to furnish material for definite conclusions, a fund has been established through the munificence of public-spirited citizens in Boston by means of which pneumococcus vaccine will be furnished without cost for the treatment of lobar pneumonia.

New York Medical Journal

November 13

21 Historical Sketch of the College of Physicians of Philadelphia. F. P. Henry, Philadelphia.
22 New Fields and Methods in Psychology. F. Peterson, New York.
23 *The Technic of Orcheopexy. F. Torek, New York.
24 *Central Dislocations of the Femur with Fracture of the Acetabulum. A. E. Halstead, Chicago.
25 Treatment of Appendicular Collections of Pus. W. L. Harris, Providence, R. I.
26 Pityriasis Rosea with Pseudovesicles. U. J. Wile, New York.
27 Medical Charity. L. H. Schwartz, New York.
28 No Free Hydrochloric Acid in the Stomach. J. Ballagi, Homestead, Pa.

23. **Orcheopexy.**—The operation devised by Torek is performed in the following manner: The testicle is exposed through an incision over the inguinal canal. The aponeurosis of the external oblique muscle is split to the same extent as in the operation of inguinal hernia. Testicle and cord are freed from all their coats. As regards the testicle, Torek is of the opinion that it is a decided advantage to liberate it by turning back its tunica vaginalis, as direct attachment to the fascia of the thigh is doubtless firmer than if the tunica vaginalis were interposed. The vas deferens and the vessels of the cord must be denuded of all their coverings. The gubernaculum testis is removed, so that nothing remains of the cord but the vas deferens and the blood-vessels, and these should be separated from all surrounding connective tissue to a point high up behind the abdominal parietes. Should any vessel exceptionally prevent the testicle from being drawn down, it may be divided.

The next step is to make an incision in the thigh to expose the fascia lata. The site for this incision is determined by taking the testicle out of the inguinal wound and drawing it down gently. The point at which it touches the thigh is chosen for the incision. The direction of the incision is from in front backward and slightly downward, thus coinciding with the natural lines of the skin. A pocket is made by gently digging with the finger from the lower end of the inguinal wound through the loose connective tissue to the bottom of the scrotum. Here the pocket is opened by an incision, which must correspond in length and direction precisely with that in the thigh, in order that the cut edges may be united evenly, without tension and without folds. The testicle may now be drawn down through the newly formed canal and be made to emerge from the scrotal wound. Or it may be left above until one is ready to suture it to the fascia. In that case, however, the canal should be kept open by inserting an instrument or a strip of gauze through it. Torek prefers this because the testicle being left above, is out of the way during the next step of the operation, the union of the upper edge of the thigh wound to the corresponding edge of the scrotal wound.

The next step is fastening the testicle to the fascia of the thigh. From three to five sutures of chromicized catgut are inserted, the number depending on the size of the organ. Enough of the tunica albuginea must be caught in the sutures to give a good hold. All sutures are inserted before any are tied. When the sutures between testicle and fascia have been tied, the anterior lip of the scrotal wound is sewn to the lower edge of the thigh wound. This suture is simple; but one must remember the tendency of the scrotal skin to turn in and must counteract it. The testicle is then completely covered by skin. The inguinal wound is closed in three layers, as in Bassini's operation for hernia, with the difference that the cord is not displaced, unless the simultaneous presence of a hernia renders this procedure desirable. In that case the deep suture, that uniting Poupart's ligament with the internal oblique and transversalis muscles and their tendon, is made before the testicle is brought down through the scrotum. In all other cases the cord is allowed to come down in the shortest and most direct way. The operation is now completed. With the aid of a dressing forceps a small strip of gauze is drawn carefully through the canal of skin between scrotum and thigh. It serves as a dressing for the deep suture. A large dressing is then applied covering the entire scrotum and the abdominal wound. This is changed after about six days, when all skin sutures are removed, except the hidden, inaccessible row of stitches between the scrotum and the thigh. After from three to six months the testicle is detached carefully, the scrotal wound closed over it, and the wound in the thigh is also closed.

24. **Central Dislocation of Femur.**—By central dislocation of the femur is meant fracture of the acetabulum with dislocation of the head of the femur into the pelvic cavity. In the literature most of the cases of this character are reported under the head of fractures of the acetabulum. From Halstead's point of view, the presence of the femoral head in the pelvic cavity is the most important element in these injuries. He reviews the literature and reports one case.

Lancet Clinic, Cincinnati

October 30

29 *Medical Education—Past, Present and Future. J. A. Witherspoon, Nashville.
30 *Modern Surgery of the Digestive Tract. J. B. Deaver, Philadelphia.

November 6

31 Th [illegible] the Modern Cataract Opera- [illegible] of the Cataractous Lens.
32 *Sa [illegible] Eastman, Indianapolis.
33 Treatment of the Sac in Hernia. C. T. Souther, Cincinnati.

29, 30, 32. Abstracted in THE JOURNAL, Nov. 13, 1909, pp. 1674, 1675, 1677.

Wisconsin Medical Journal, Milwaukee

October

34 *Diagnosis and Treatment of Renal Calculi. J. F. Smith, Wausau.
35 Treatment of Acute Gonorrhea. D. J. Hayes, Milwaukee.
36 *Chronic Gonorrhea in Men. E. A. Fletcher, Milwaukee.
37 *Sociologic Aspect of the Venereal Diseases. P. F. Rogers, Milwaukee.

34. Abstracted in THE JOURNAL, Aug. 7, 1909, p. 481.

36, 37. Abstracted in THE JOURNAL, Aug. 21, 1909, p. 648.

Illinois Medical Journal, Springfield

November

38 *Clinical Significance of Albumin and Casts in the Urine. A. R. Elliott, Chicago.
39 Nature of Cardiovascular Changes in Nephritis. A. C. Croftan, Chicago.
40 *Value and Limitation of Salt-Free Diet and Restriction of Fluid in Nephritis. C. S. Williamson, Chicago.
41 Fracture of Pelvis and Rupture of Bladder. E. K. Lockwood, Virden.
42 *Diagnosis and Treatment of Stone in Ureter. A. D. Bevan and H. L. Kretschmer, Chicago.
43 *Vesical Symptoms Due to Diseases External to the Bladder. L. E. Schmidt, Chicago.
44 Pa [illegible] on of the Renal Pelvis.
45 *U [illegible] Bladder: Removal by [illegible] and R. R. Duff, Chicago.
46 *Su [illegible] Goiter. C. E. Black,
47 Brain Tumor, with Specimens of Brain and Tumor. C. B. Horrell, Galesburg.
48 *Action of the Coal-Tar Anodynes. B. Fantus, Chicago.
49 Studies in Contemporary Workman's Compensation (continued). W. H. Allport, Chicago.

38, 40. Abstracted in THE JOURNAL, June 5, 1909, pp. 1881, 1882.

42. **Stone in the Ureter.**—This paper emphasizes the diagnostic value of the Roentgen ray in cases of stone in the ureter.

43. **Diseases External to Bladder.**—Schmidt presents the following original classifications: (1) Bladder symptoms due to constitutional or general diseases which are common to both sexes; (2) bladder symptoms due to diseases of neighboring organs or other urinary organs, which are common to both sexes; (3) bladder symptoms due to physiologic or pathologic conditions of the female genitalia, and hence present only in the female; (4) bladder symptoms due to pathologic conditions of the male genitalia, and hence present only in the male; (5) bladder symptoms due to primary pathologic conditions of the bladder itself, common to both sexes.

45. **Foreign Body in the Male Bladder.**—The patient, male, aged 28, was in the habit of introducing a small candle into the urethra. The foreign body slipped from his fingers beyond reach, and passed back into the membranous urethra. In attempting to extract the candle he forced it deeper back until the last attempt forced it up into the bladder.

46. Abstracted in THE JOURNAL, June 19, 1909, p. 2020.

48. **Action of Coal-Tar Anodynes.**—Speaking of the pharmacology of some of the popular combinations, Fantus says that first and foremost in popularity is the combination with caffein, usually in the proportion of one part caffein to three parts of the coal-tar derivative. The caffein is supposed to antagonize the collapse action. That it is not very successful in this respect is evident from the fact that just such combinations as are found in bromo-seltzer, antikamnia, etc., have repeatedly produced death. Perhaps the main reason for the popularity of this combination lies in the fact that caffein has a specific action in temporarily overcoming fatigue and the symptoms produced by it, such as the aches and pains of nerve-tire. In just such pains the coal-tar anodynes are also of value. A combination of the two undoubtedly acts with greater force in cases of this kind than either remedy alone. We must not forget, however, that caffein produces wakefulness. Therefore, this combination must not be used in the thoughtless manner in which it has so often been employed in the past. It is especially indicated in fatigue disturbances; it is especially contraindicated in insomnia and in conditions of excessive nervous irritability. Combination with a bromid is likely to be of advantage in the last-mentioned condition.

Pennsylvania Medical Journal, Athens

October

50 *President's Address: Physicians and the Public. G. W. Wagoner, Johnston.
51 Municipal Campaign for Reducing Infant Mortality. S. W. Newmayer, Philadelphia.
52 *Influence of Factory Inspectors on Public Health. H. B. Wood, Philadelphia.
53 Then and Now L. W. Fox, Philadelphia.
54 The Problem of Infant Mortality. J. F. Edwards, Pittsburg.
55 Care of the Pregnant Patient. S. Coles, Philadelphia.

50. Abstracted in THE JOURNAL, Oct. 9, 1909, p. 1216.

52. This article also appeared in the *Virginia Medical Semi-Monthly*, October 22.

American Journal of Physiology, Boston

November

56 *Destructive Effect of Shaking on the Proteolytic Ferments. A. D. Shaklee and S. J. Meltzer, New York.
57 Effect of Subminimal Stimulation of the Pneumogastric Nerves on the Onset of Cardiac Rigor. D. R. Joseph and S. J. Meltzer, New York.
58 *Nuclein Synthesis in the Animal Body. E. V. McCollum, Madison, Wis.
59 *Elimination of Barium. G. M. Meyer, New York.
60 The Neurocytologic Reaction in Muscular Exertion. D. H. Dolley, Raleigh, N. C.

56. **Effect of Shaking on Proteolytic Ferments.**—Shaklee and Meltzer have studied the effect of shaking in partly-filled bottles, laid horizontally, on the action of proteolytic ferments. The more essential result of their experiments is that shaking may destroy the three ferments, pepsin, rennin and trypsin; that these are destroyed more rapidly at higher

than at lower temperatures; that trypsin is more easily destroyed than pepsin, and that the shaking produced by the respiratory movements is capable of causing some destruction of the ferments. The experiments showed that the inactivity of the ferment was not dispelled by standing, *i. e.*, it was not a mere inactivation. Recent experiments by other investigators show that other ferments also may be inactivated by shaking. Numerous older experiments have established that shaking is capable of influencing, fundamentally, bacteria, yeast, red blood cells and echinoderm eggs. The authors asume that ferments are organized substances, possessing a certain structure which may be destroyed by shaking. They consider that the action of each ferment is due to a specific vibration which it undergoes in response to shocks derived from the outside and which is made possible by its specific structure. Too vigorous shaking by destroying this peculiar structure makes the continuance of the specific vibration impossible.

58. **Nuclein Synthesis.**—McCollum, after feeding experiments on rats, comes to the following conclusions: The palatability of the ration is the most important factor in animal nutrition. Without palatability, the ration may possess all the necessary food ingredients and yet fail to nourish an animal properly. The failure of previous efforts to maintain animals on a mixture of relatively pure proximate constituents of food-stuffs was due to lack of palatability of the mixture. When sufficient care is given to changing the character and flavor of food supplied in such simple mixtures, it is possible to induce an appreciable amount of growth. Very young animals adapt themselves to a ration possessing a low degree of palatability much better than do adults. Other things being satisfactory, all the phosphorus needed for the growth of the skeleton, nuclein, or phosphatide formation, can be drawn from inorganic phosphates. The animal has the power to synthesize the purin bases necessary for its nuclein formation from some complexes contained in the protein molecule, and does not necessarily use purin bases of exogenous origin for this purpose.

59. **Elimination of Barium.**—Meyer finds that barium injected parenterally is not eliminated to an appreciable extent in the urine but passes out with the feces.

Ohio State Medical Journal, Columbus

October

61 Application and Limitations of Bacterial Therapy. W. J. Stone, Toledo.
62 *Traumatisms of the Sacroiliac Joint, and Their Sequelæ. R. Carothers, Cincinnati.
63 Recognition and Treatment of Pre-Eclamptic Toxemia. F. S. Clark, Cleveland.
64 Ureteral Calculi. C. M. Harpster, Toledo.
65 *Etiology of Senile Cataract. C. Lukens, Toledo.

62. Abstracted in The Journal, June 5, 1909, p. 1875.

65. Abstracted in The Journal, May 29, 1909, p. 1784.

Journal of Medical Research, Boston

September

66 *Arthritis Deformans. E. H. Nichols and F. L. Richardson, Boston.
67 *Leucocytic Extract: Its Action on the Course of Pneumonia. C. Floyd and W. P. Lucas, Boston.
68 Index to Tuberculin Treatment in Tuberculosis by the Minimal Cutaneous Reaction Method. W. C. White, D. A. L. Graham and K. H. Van Norman, Pittsburg.
69 *Action of Serums on Tuberculin Cutaneous Reaction. W. C. White and D. A. L. Graham, Pittsburg.
70 New Anaërobic Spore-Bearing Bacterium Commonly Present in Livers of Healthy Dogs, and Responsible for Many Ch[illegible]septic Autolysis of Liver Tissue. S. B. [illegible], Albany, N. Y.
71 Devic[illegible]naërobes in Plate Cultures, by Use of [illegible] Mixtures. T. Saiki, Albany, N. Y.
72 Rate [illegible] and the Appearance of Gases and Acids in the Autolysis of So-called Sterile Livers of the Dog. H. C. Jackson, Albany, N. Y.
73 *Tumors Found in Wild Rats. G. W. McCoy, U. S. Public Health and Marine-Hospital Service.
74 *Changes Occurring in the Elastic Fibers of the Aorta with Advancing Age. L. S. Foster, Montreal.
75 An Extract of the Kidney. E. A. Aronson, Boston.
76 *Transplantation of Devitalized Arterial Segments; Morphologic Changes in the Implanted Segments. I. Levin and J. H. Larkin, New York.
77 Method for Obtaining Human Plasma Free from Chemical Action. Its Effect on Phagocytes. D. M. Cowie, Ann Arbor.

66, 76. Abstracted in The Journal, April 24, 1909, p. 1351.

67. **Action of Leucocyte Extract on Pneumonia.**—Aqueous extracts of rabbits leucocytes were used in the treatment of pneumonia in man. Harmful action was not observed in any of the cases and the authors "feel that where a case of pneumonia is treated early with extract of leucocytes, and full and frequent doses given where they are required, this may prove of considerable therapeutic value."

69. **Sera in Tuberculin Cutaneous Reaction.**—The results of Pickert and Löwenstein to the effect that sera of patients tolerant to large doses of tuberculin possess the power of inhibiting cutaneous tuberculin reaction, appear to be confirmed.

73. **Tumors in Wild Rats.**—In 100,000 rats examined in the Federal Plague Laboratory at San Francisco from June 1, 1908, to May 15, 1909, 103 presented tumors suitable for examination, many being adenomas and a few typical carcinomas.

74. **Changes in Elastic Fibers of Aorta.**—The elastic fibers in the aorta require from thirty to thirty-five years to reach their full development. After about thirty-five years there is a quiet period for about fifteen years during which no developmental changes take place. After this time degenerative changes of greater or less extent are seen in the elastic fibers.

Louisville Monthly Journal of Medicine and Surgery

November

78 *Medical Education—Past, Present and Future. J. A. Witherspoon, Nashville, Tenn.
79 *Modern Surgery of the Digestive Tract. J. B. Deaver, Philadelphia.
80 Mistakes in Medical Practice. S. G. Bonney, Denver.

78-79. Abstracted in The Journal, Nov. 13, 1909, pp. 1674, 1675. Published in *The Lancet-Clinic*, Oct. 30, 1909.

American Journal of Surgery, New York

November

81 *Experiments in Certain Methods of Intestinal Anastomosis. C. Georg, Ann Arbor, Mich.
82 *Surgical Relations of Intestinal Gases. B. B. Davis, Omaha, Neb.
83 Septicemia Following Submucous Resection of the Nasal Septum; One Death, One Recovery. H. Hays, New York.
84 Spoon Enucleation of the Tonsil. A. M. MacWhinnie, Seattle, Wash.
85 Tracheotomy for Foreign Bodies in the Air Passages. W. F. Westmoreland, Atlanta, Ga.
86 Treatment of Eclampsia. F. C. Holden, Brooklyn.

81. **Intestinal Anastomosis.**—As the result of experiments which have extended over a period of two years, Georg concludes that the method of Parker and Kerr is the most practical for end-to-end anastomosis, and that of Capek for lateral anastomosis and gastroenterostomy.

82. **Surgical Relations of Intestinal Gases.**—Davis has found in his clinical work that postoperative tympany and trouble in securing intestinal evacuations have decreased in proportion to the care used in keeping the operating room warm and the exposed coils of intestines protected by gauze pads wrung out of hot normal salt solution. Even the slighter abdominal sections done with equal care in handling, but in a cool operating room, and without the protection of hot pads, have been followed by a stormy period of tympany and other disagreeable symptoms which accompany this condition.

Postoperative treatment should be as simple and natural as possible. There should be no starvation, unless the stomach or small intestine is in a condition to prohibit food, but also no forced feeding at first. The weakness which follows denial of all food, and the discomfort and disgust of too much should alike be avoided. Water given as soon as the patient calls for it has been found greatly to promote comfort and a feeling of well-being. It also seems to encourage postoperative peristalsis. Something to promote early restoration of peristalsis is of great importance if a patient would pass a comfortable convalescence.

For fourteen years Davis has made a routine use of strychnin hypodermically after operations, not so much as a heart stimulant as to encourage peristalsis. When it was first made use of it was a matter of frequent remark in the hospital that trouble from postoperative tympany was of rare occurrence. Of late, cases that give trouble from unusual accumulation of gas have been treated with salicylate of eserin in doses from 1/60 to 1/40 gr. hypodermically. Its use has been followed often by an early passing of gas and there can be no doubt that it promotes peristalsis to a remarkable degree and is of great use when the tympany is due solely to muscular atony. An absolute contraindication to the use of eserin is mechanical obstruction and it should be avoided just as one avoids cathartics when mechanical obstruction is present. When rightly used, eserin is an important advance in the treatment of atonic tympany.

Davis says that the points that practical surgeons need especially to have in mind are (1) to have as little fermentable substance as possible in the intestines before operation; (2) to do as little as possible during the operation which will interfere with the normal circulation in the intestinal wall; there should be a minimum amount of handling and resulting trauma; (3) to leave the intestines in the best condition for active peristalsis; long exposure and much cooling are inimical to active peristalsis.

St. Louis Medical Review

October

87 Wassermann Reaction for the Serodiagnosis of Syphilis. J. W. Marchildon, St. Louis.
88 Diseases of the Gall-Bladder. C. H. Powell, St. Louis.
89 Claims of Charles Darwin on the Homage of Scientific Posterity. J. Knott, Dublin, Ireland.

American Medicine, New York

October

90 Cancer of the Breast. A. L. Smith, Montreal.
91 *Nutrition During Critical Physiologic Periods. J. E. Davis, Detroit.
92 Value of the Obstetric Forceps in Abnormal Labor. V. A. Robertson, Brooklyn.
93 Recent Investigations of the Pituitary Gland. H. G. Beck and J. J. O'Malley, Baltimore.
94 [illegible] Maxilla. N. P. Geis, Brooklyn.
95 *[illegible] rine Examination"—A Farce. H. R. [illegible]
96 [illegible] of Hemorrhoids and Choice of Method. A. Stracustein, New York.

91. Nutrition During Pregnancy.—Davis emphasizes the fact that food therapy in the toxemias of pregnancy is a factor of utmost importance as a preventive as well as a remedial measure. A high fat content is demanded in periods of enormous growth. In certain specific periods of growth a high proteid percentage is safely metabolized. A constant carbohydrate content must be obtained regardless of the proteid and fat proportion. In acidosis a high or almost exclusive carbohydrate diet for a short time is very efficacious.

95. Life Insurance "Urine Examination."—Harrower says that the examination of the urine, and especially that made for the benefit of life-insurance companies is altogether too crude, and not nearly extensive enough. Because of this individuals are being refused life-insurance who would make excellent risks, and, on the other hand, others are "passed" who are by no means what might be called healthy, and, in fact, are in a serious condition. The examination should be made by such as are skilled in this work and should be paid for accordingly. Three dollars is not an unreasonable figure.

St. Paul Medical Journal

November

97 Ocular Manifestations of Hereditary Syphilis. F. E. Burch, St. Paul.
98 Analysis of Kotzebue's *"Die Organe des Gehirns."* C. G. Cumston, Boston.
99 Medical Treatment of Gastric Ulcer. J. S. Gilfillan, St. Paul.
100 Benzoate of Soda as a Preservative. F. N. Foot, St. Paul.

Annals of Otology, Rhinology, and Laryngology, St. Louis

September

101 [illegible] Since Invention of the Laryngo- [illegible] ticipation of America in this [illegible] saw, Poland.
102 [illegible] on the Respiratory Organs and the General System. W. S. Anderson, Detroit.
103 The Phenomena of Vestibular Irritation in Acute Labyrinthine Disease; Studies of Dr. Barany of Vienna. P. D. Kerrison, New York.
104 Necrosis of the Cochlea. A. Michaelis, New York.
105 *Suppuration of the Labyrinth. L. Page, Indianapolis.
106 Sloughing Fibroma of the Nasopharynx. H. L. Swain, New Haven, Conn.
107 *Fatal Status Lymphaticus in a Patient Operated on for Tonsillar Hypertrophy under Cocain-Adrenalin Infiltration. T. J. Harris, New York.
108 Nerve Distribution in Relation to Nerve Reflexes Simulating Local Inflammation. A. A. Bliss, Philadelphia.
109 *Taking Cold. D. B. Kyle, Philadelphia.
110 Laryngeal Paralysis as Early Indication of Systemic Disease. G. T. Ross, Montreal.
111 Nasal Myxosarcoma in a Child of Three Years. G. T. Ross, Montreal.
112 *Aural Complications in the Exanthemata. C. R. C. Borden, Boston.
113 Nasal Tuberculosis. W. S. Renner, Buffalo.
114 Complete Extirpation of the Diseased Faucial Tonsil. J. S. Gibb, Philadelphia.
115 Surgical Treatment of Otitis Meningitis. G. Alexander, Vienna.

105. Suppuration of the Labyrinth.—Recently most exhaustive tests have been applied to these cases to determine if the labyrinth of the affected ear was in any way functionating. The Barany tests were negative in all cases for the operated ear. The hearing tests were uncertain. Until the Voss test for eliminating the normal ear was used, it was impossible to determine if a certain degree of hearing did not exist in the operated ear of all these patients. Page is of the opinion that all reported cases in which it is claimed that any degree of hearing remains after removing a part of the cochlea is a mistake, and that if the Voss test for eliminating the normal ear is applied to these cases it will convince the operator that complete destruction of hearing always follows the removal of any part of the cochlea.

107. Status Lymphaticus.—Harris' patient had an enlarged thymus, weighing 18 grams, which accounted for all the symptoms produced. There was the convulsion with pallor, followed by the intense cyanosis. There was, however, no tracheal stenosis, and the death, as shown by autopsy, was undoubtedly of cardiac origin.

109. Taking Cold.—Kyle divides the condition of taking cold into three classes: First, actual cold; taking cold; acute rhinitis. Second, an underlying systemic condition which produces some local manifestation and irritation in the mucous membrane, predisposing the individual to taking cold. Third, an underlying systemic condition in which the patient has not taken any cold, but the symptoms produced in the mucous membrane are those of a cold. Therefore, the expression "taking cold," as so frequently used by patients and sometimes by medical practitioners, is in many cases a misnomer. The practitioner of special medicine so often sees the individual with a condition resembling a cold in which there is no history of exposure nor usual systemic phenomena, and yet, to all intents and purposes, the patient is suffering from a cold in the head, or has taken cold. Review of the systemic conditions which bring about irritation of the mucous membrane which resembles taking cold, show that in a large percentage of cases of so-called cold in the head, no one remedy can be applied, and that the individual must be studied as carefully for the predisposing cause or underlying element as though typhoid or a beginning pneumonia were suspected.

The individual study of cases enables the physician to apply his remedial agent scientifically and not empirically prescribe a "cold" remedy. Kyle's experience has been that out of 100 persons presenting themselves for relief of what they call a cold in the head, or having taken cold, or frequently taking cold, at least 80 per cent. belong to the class of the systemic condition, either constitutional, organic, or chemical.

112. Aural Complications in Exanthemata.—Borden urges that general practitioners should regard aural discharge as a menace to hearing, and occasionally to life, and not as a more or less common complication without special importance. In a series of 1,164 cases previously reported by Borden in children up to 16 years of age, having aural diseases, 31.6 per cent, had chronic purulent otitis media of long standing.

Buffalo Medical Journal

November

116 *Personal Experiences in Gall-Bladder Surgery. H. E. Hayd, Buffalo.
117 Care of the Sick and Injured. J. C. Young, Cuba, N. Y.
118 Experiments on Animals Relative to the Question of Abdominal Supporters After Laparotomy. R. T. Morris, New York.
119 Consideration of Two Distinctly Different Types of Talipes Equino-Varus. R. O. Meisenbach, Buffalo.

116. Published in *American Journal of Obstetrics and Diseases of Women and Children*, November, 1909.

Journal of New Mexico Medical Society, East Las Vegas

November

120 Medical Education. G. K. Angle, Silver City.
121 *Hypodermic Injection of Mercury in the Treatment of Tuberculosis. L. S. Peters, Silver City.
122 Indigent Consumptive Proposition. C. M. Mayes, Rozwell.

121. **Hypodermic Injection of Mercury in Tuberculosis.**—Peters' report covers a series of 7 cases. He found that his results with mercury are not better than with any other method of treatment.

California State Journal of Medicine, San Francisco

November

123 Diagnosis and Treatment of Ureteral Calculus. R. L. Rigdon, San Francisco.
124 Headache—A Symptom and its Significance. F. W. Miller, Los Angeles.
125 *Medical Side of Headache. J. W. Shiels, San Francisco.
126 The Eye as a Causative Factor in Chronic Headaches, with Reference to the Ear, Nose and Throat. W. S. Franklin, San Francisco.
127 *Nephritis with Unusual Features. C. H. Harry, Stockton.
128 Visible Movement of Blood in Retinal Vessels. C. S. G. Nagel, San Francisco.

125. **Headache.**—The following classification of headache is offered by Shiels:

I. FUNCTIONAL HEADACHE

A. TOXEMIC HEADACHES

(1) *Acute*

1. Specific infectious (fevers) frontal or general, seldom vertical or one sided. Increased by congestion.
2. Acute nephritis [illegible] uremia.
3. Acute composite [illegible] th acetone bodies).
4. Puerperal states [illegible] preseptic.
5. Acute drug poisc [illegible] oglycerin, etc.

(2) *Chronic* (Including products of defective metabolism):

1. Kidney headache. From slight neuralgic type to severe with high grade arteriosclerosis. D.D. when severe with albuminuric neuritis from cerebral tumor.
2. Gouty headaches. May be a severe "plus tension" headache or mild "minus tension" headache
3. Malarial headache, neuralgic in type, "brow ague." Short intermissions.
4. Rheumatic headaches common in childhood and associated with "school pressure." Frontal.
5. Syphilitic.
6. Sluggish liver headache associated with constipation.
7. Cirrhotic liver headache (more complicated than No. 6).
8. Constipation headache, without liver associations. (Also reflex.)
9. Intestinal dyspepsia headache, with or without constipation. (Also reflex.)
10. Gastric dyspepsia. (Also reflex.)
11. Gluttony of fats, proteids, or carbohydrates, i. e., acid products.
12. Slow drug poisoning, *e. g.*, arsenic, lead, etc.
13. Noxious air, etc.

B. NEUROPATHIC

1. Emotions and other psychic faults. (Hyperemic.)
2. Migraine (typical), two types, tonic or paralytic, but generally combination.
3. Recurrent or periodic headache without visual phenomenon.
4. Simple neurasthenic headache. (Not sharply defined, "cephalic sensation.")
5. Traumatic neurasthenic headache. (Generally sharply defined.)
6. Epileptic with or without fit.
7. "School pressure" headache.
8. Premenstrual headache other than migraine.

C. REFLEX

1. Errors and disorders of eye, ear, nose, throat and mouth. (When recurrent usually neuropathic, frontal sinus.)
2. Gastric, including hunger and fasting, hyperesthesic, scalp areas, temporal and parietal (D7 and D8).
3. Thoracic and hyperesthesic; scalp area, midorbital and fronto temporal (D4 to D7).
4. Abdominal and hyperesthesic skin areas, occipital, parietal, vertical and temporal (D7 to D10).
5. Migraine (anemic and hyperemic).
6. Periodic other than migrainous.

II. ORGANIC

1. Inflammations within: Encephalitis, local or diffuse from any [illegible] many of the above.) Leptomeningitis [illegible]
2. [illegible] Sinus disease. Bone disease (includ- [illegible] s, etc.).
3. Arterial degeneration (see chronic toxic headaches).
4. Tumors (including syphilis, tubercular cysts, etc.), severe, dull or acute, constant with paroxysmal attacks. No definite position unless superficial, preventing sleep. Intracranial pressure augments, vertigo, optic neuritis, etc.
5. Indurative (see toxic).

III. CIRCULATORY

A. Anemic, slowly produced; majority "minus tension" headaches; controlled by position and alcohol.

1. Systemic (convalescence).
2. Blood dyscrasias.
3. Cardiac debility.
4. Consequent on pressure.
5. Consequent on spasm.

B. Hyperemic, majority "plus tension."

1. Heart hurry (exophthalmic goiter, etc.).
2. Cold, etc. (peripheral spasm).
3. Drugs, nitroglycerin, etc.
4. Sunstroke (excessive heat, alcohol, anger).

C. Passive Congestion, "mechanical headaches."

1. Mitral and other head lesions.
2. Mediastinal tumor.
3. Persistent cough.
4. Faulty attitude in sleep.
5. Collar restrictions, etc.

127. **Nephritis with Unusual Features.**—Harry's cases are interesting from the fact that, although the patients were all comatose before they died, none of them had any muscular twitching or convulsions. One case was remarkable from the fact that the patient lived six days with a total secretion during that time of from 4 to 6 ounces of urine. She was perfectly conscious until the night before she died, and did not complain from anything except the soreness of her gums from ulceration.

Journal Indiana State Medical Association, Fort Wayne

October

129 *The Art of Medicine. G. D. Kahlo, French Lick.
130 *Heredity and Disease. J. Collins, New York.
131 Sketches of the Medical History of Indiana. H. W. H. Kemper, Muncie.
132 Race Suicide. E. E. McGriff, Portland.

129, 130. Abstracted in The Journal, Oct. 23, 1909, p. 1422.

Albany Medical Annals

November

133 Import of Medical Education. F. C. Curtis, Albany.
134 *Use of Nitroglycerin in Chronic Myocarditis and Edema of the Lungs. S. B. Ward, Albany.
135 *Thymus Death. W. Kirk, Troy, N. Y.
136 Desirability of a More Perfect Medico-Dental Schindylesis. S. L. Dawes, Albany.
137 The Albany Hospital. J. M. Mosher, Albany.

134. **Nitroglycerin in Chronic Myocarditis.**—In Ward's experience, one-drop doses of 1 per cent. solution of nitroglycerin, given with digitalis, every two or three hours, are practically inert; but if from 1/20 to 1/10 of a grain be given every minute, for twenty or thirty doses, brilliant results will be obtained, days before the effect of digitalis can possibly be expected. In edema of the lungs the toleration for this drug is most extraordinary, and relief from dyspnea is uniformly obtained before the physiologic effects, such as flushing of the face and throbbing headache, are produced. Ward reports two cases of myocarditis with cardiac failure and edema of the lungs, one without and the other with valvular lesion, in which nitroglycerin was of the greatest service.

135. **Thymus Death.**—Kirk reports 2 cases with autopsies. Case 1, a boy aged 18 months found dead in bed. Thymus; greatly increased connective tissue, very slight fatty change; increase in lymphoid and large polyhedral cells. Case 2, sudden death after illness of two hours' duration. Enlargement of thymus; enlargement of mesenteric glands (lymphatic); hypostatic congestion of both lungs.

Atlanta Journal-Record of Medicine

October

138 Cases of Pellagra. H. R. Slack and W. R. McCall, La Grange, Ga.
139 Duties of the Obstetrician to His Patient. J. H. McDuffie, Columbus, Ga.
140 Diagnosis of Breast Tumors. J. P. Watkins, Opelika, Ala.
141 Rôle of Insects in the Transmission of Diseases. B. F. Rea, La Fayette, Ala.
142 Intussusception. W. C. Cook, Columbus, Ga.
143 Anesthesia. E. T. Green, Hickory Flat, Ala.
144 Intracapsular Fracture of the Hip-Joint. A. D. McLain, Salem, Ala.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

October 30

1 *Hernia of the Uterus in Men and Women. J. Bland-Sutton.
2 *Increase of the Hemolytic Power of Serums. D. Embleton and H. B. Shaw.
3 Appendicostomy for Various Forms of Colitis. F. C. Wallis.
4 *Fulminating Appendicitis. H. B. Butler.
5 *Pneumococcus Invasion of the Throat. W. E. Peacock.
6 *Whitehead's Operation for Hemorrhoids. E. S. Bishop.
7 *After-Results of Operative Treatment of Hemorrhoids. H. G. Anderson.
8 Acute Necrosis of the Pancreas; Sudden Death. B. H. Shaw.
9 Congenital Pyloric Stenosis Successfully Treated without Operation. E. M. Pearse.

1. **Hernia of Uterus in Men and Women.**—Bland-Sutton has collected many instances in which men with incompletely developed external genital organs have been brought up as women, and late in life suffered from strangulated hernia. Bland-Sutton says that it sometimes happens that herniotomy is performed on a child with normal female external genitalia, the surgeon removes a rounded grandular body from the inguinal canal, which he believes to be an ovary, but on microscopic examination it proves to be a testis. The most remarkable cases are those in which the surgeon performs an operation on a man with well-formed external genital organs for the purpose of removing a tumor from the scrotum, but the suspected tumor proves to be a uterus.

2. **Hemolytic Power of Serums.**—Embleton and Shaw succeeded experimentally in developing in the serum of animals, into which injections had been made of the organs of another animal of the same species, a change which consists in part at least, in the increase of the hemolytic power of the serum. Further, the emulsions of different organs appeared to have different powers of checking the hemolytic property of such experimental serums, the kidney possessing the greatest and the liver the least power, while the spleen and heart occupy an intermediate position, and are equally or nearly equally potent.

4. **Fulminating Appendicitis.**—According to Butler, the fulminating cases of appendicitis are due to the formation of a volvulus of the appendix, which is thereby strangulated, and the toxemia and localized peritonitis, which mark ordinary cases of appendicitis, are not present. Gangrene supervenes rapidly, and there is no time for adhesions to form and to shut off an abscess. General septic peritonitis, therefore, ensues if an operation is not performed in the first few hours after the onset of the pain. Volvulus of the appendix may, he thinks, develop in any case in which the appendix lies free in the abdomen, but not when it lies in the retrocecal fossa.

5. **Pneumococcus Invasion of the Throat.**—Peacock reports a case of this kind which was followed by pleuropneumonia and appendicitis. Operation was performed and the patient recovered.

6. **Whitehead's Operation for Hemorrhoids.**—After twenty years' experience with various operations for the cure of hemorrhoids, Bishop recommends Whitehead's operation as at once the most effective, the least painful, and the safest method, but it is necessary for success that certain precautions should be taken beforehand, and that the technic should be carried out very carefully. The intestinal tract should be previously cleared as much as possible. It is not only annoying, he says, but distinctly detrimental to the work, if large masses should make their appearance in the rectum during the ensuing week. Probably the best method of insuring their absence is the administration on the day but one before, of an ounce of castor oil, the taste of which may be disguised by an admixture with it of 2 drams of tincture of cardamom. On the day before operation, the action of this should be supplemented by a copious enema of soap and water, so that the rectum may be clean. At the operation itself another free douche of weak permanganate of potash solution should also be used during the process of dilatation.

Free dilatation of the sphincter should be done before any cutting is commenced. It should be gradual, plenty of time being taken over it, so that no tearing of the muscle is possible. During the operation any actively spurting vessel should be tied, but venous bleeding may be ignored; this bleeding is sometimes free, but will cease as soon as the operation is completed.

Hundreds of patients have been so treated by Bishop without any mortality, and in all with a speedy convalescence. In a few—possibly 2 per cent.—spasmodic urinary retention for a few hours occurred, and, in still fewer, pain at the anus has been complained of, but both speedily yielded to hot boric acid fomentations applied to the part. Catheterism has never been required and, although hemorrhagic discoloration has been seen in a few instances, suppuration or abscess has never followed. Recovery has, in the great majority of cases, been singularly uneventful, and in all complete.

7. **Operation for Hemorrhoids.**—Anderson claims that the Whitehead method should not be employed in all cases of hemorrhoids and that it is indicated in the following conditions: (a) When there is a general hemorrhoidal condition involving the whole circumference of the anal canal, and especially if there is a good deal of prolapse, and also in cases in which there is extensive thrombosis. (b) In cases in which, though the piles may not be large, there is a pathologic condition which may be described as a prefissure or a prefistula state. In this condition the anal valves are enlarged, and curious little blind submucous pockets may be found running for a varying length upward. In other cases these pockets run downward toward the anal margin.

Lancet, London

October 30

10 Balneolo. L. Williams.
11 *Need for to Anesthetics. F. W. Hewitt.
12 Certain is. J. C. Briscoe.
13 *Perforation of Stomach and Duodenal Ulcer. J. G. Andrew.
14 Selection of Patients for Spa Treatment. N. Wood.
15 Ankylostomiasis and its Complications in Eastern Bengal. R. W. Burkitt.
16 Case of Typhoid Spine. C. J. Wilson.
17 Endemic Cerebrospinal Meningitis Treated by Intraspinal Injections of Flexner's Serum; Recovery. D. D. Rosewarne.

11. **Legislation in Regard to Anesthetics.**—That legislation is necessary before the administration of anesthetics can be placed on a safe basis is the contention made by Hewitt. He points out that there is too much single-handed anesthetizing and operating done, especially by dentists, and that this is, in large part, responsible for the mortality from anesthesia. He presents the draft of a bill which proposes to make it a penal offense for any person other than a legally qualified medical practitioner to administer either a general or a local anesthetic. Such a step would also encourage physicians to specialize in anesthesia, which would be most desirable for all parties concerned.

13. **Perforation of Gastric and Duodenal Ulcer.**—Thirteen patients with perforation of the stomach and duodenum were seen by Andrew within a period of nine months. One patient with gastric perforation came to the operating table on three separate occasions; 10 of the cases were gastric and 3 were duodenal. The ages ranged from 16 to 72 years. The average age over all was 37.7 years. The average age of the gastric patients was 36.8 years, of the duodenal patients 41 years. Of the 10 gastric cases only 3 occurred in females, whose average age was 19 years. The 3 duodenal perforations were in men. In 12 of the 13 cases the onset might be said to be instantaneous; in one the onset was more or less subacute. In the majority no food had been taken for some time previously, and the time of perforation was oftenest in the late hours of the evening or in the early morning. In 8 there was definite history of pain after food and other gastric symptoms; in the remaining 5 no history of previous gastric trouble was obtained. In every case of this series pain was a prominent feature, but was quite impossible to define, except that it was severe, "doubled him up," "made him cry out," etc., and was equally difficult to locate apart from surface tenderness. The patients were so ill that speaking was an additional agony and as little as possible was said and indeed asked. In 6 cases, however, the pain was definitely referred to the epigastrium, in 3 others, the pain began around the umbilicus, remaining there in 1, and in the other 2 becoming epigastric later. In 2 the pain was felt in the shoulders as well as in the abdomen—both gastric—so that in 9 out of 13 cases the pain was referred to the upper part of the abdomen. Vomiting subsequent to the onset was stated to have occurred in 7 cases. Collapse was a prominent feature in most of the cases, depending on the length of time since the onset.

Appearance in most cases was indicative of severe pain; the patient looked very ill; the face was pale with malar flush. Distention was definitely present in 4 cases. Rigidity of the abdominal wall, with one exception, was present in every case. In 11 of the cases the rigidity was general, in 2 it was epigastric, but in every case it was more than evident over the stomach. In one case the main rigidity was found on the right side; in another the contraction of the recti was visible. The earlier the case the greater was the rigidity. In the only case in which it was stated to be absent nearly sixty hours had elapsed from the time of onset, and the general peritoneal cavity was found to be shut off. Tenderness, abdominal, on palpation, was present in every case but one, and in that case there had been tenderness which had passed off, and as this patient was seen within a few hours after perforation the tenderness from peritonitis had not had time to manifest itself; the ulcer, moreover, was on the posterior wall. In 6 cases there was epigastric tenderness only; in the remaining 7 it was general, with perhaps a greater degree of tenderness in the epigastrium. In 10 cases there was some alteration in the liver dulness; in 3 cases the liver dulness was completely gone, in 7 it was encroached on, and in 3 cases the liver dulness was normal. Signs of free fluid in the abdominal cavity were obtained in 6 cases. The length of time between onset and operation varied from four and a half to eighty hours. Seven patients were operated on under twelve hours; of these 2 died. In 8 instances the perforation involved the anterior wall of the stomach; in 6 of these it was toward the lesser curvature and close to the pylorus. In 2, the posterior wall was the seat; in 1 of these about its center, and in the other at the pylorus. In the 3 duodenal cases the ulcer was situated in the anterior wall of the first part, so that it might be said that in 11 out of the 13 cases the ulcer was situated in the immediate neighborhood of the pylorus.

Journal of Tropical Medicine and Hygiene, London

October 15

18 Dengue, or Three Day Fever. J. C. D. Allan.
19 Is [illegible] the Expression of Anaphylaxis to a [illegible] J. B. Cleland.
20 *Ra[illegible] Maldevelopment. B. N. Ghost.

20. **Congenital Maldevelopment.**—The points noted in this case by Ghost were: 1. Talipes of the right foot; besides there were six toes on that foot. 2. Imperforate anus. 3. No external organs of generation, but only an atrophied scrotum, without the testes in it. 4. The abdominal wall, from the navel downward in the middle line, was partly deficient, and there was a protrusion, possibly the lower gut, with an opening at the end, looking upward, and through which the child passed stools. This protrusion could not be separated from the wall with which it was intimately fixed. The navel coalesced with this protruding mass, the umbilical cord coming out from the top. 5. Urine was passed in drops from a very small opening just under the protruding mass, but there was nothing like a urethra. The child was otherwise healthy and took milk well. No other organs seem to have shared in the defective growth. Heart sounds were normal. The whole protruded portion was not covered with skin, but had a mucous lining, quite soft and red.

Ghost believes that the rectum had no mesorectum developed to keep it *in situ;* it turned upward and found its way through the abdominal wall, which was deficient, and got fixed there. The opening at the end of it, which still serves as the outlet for stools, is looking upward and is big enough to admit a goose-quill. There being no external organs of generation and no urethra, the neck of the bladder opened directly at the lower part of the deficient wall.

Glasgow Medical Journal

October

21 Modern Moods and Movements in Medicine. T. Oliver.
22 Schools for the Deaf in Scotland and Ireland (concluded). J. K. Love.
23 Condition of the Eyes in the Deaf. W. Thomson.
24 A Retrospect of Glasgow Physicians and Surgeons. R. B. Lothian.

Intercolonial Medical Journal of Australasia, Sydney

September

25 Dysmenorrhea. G. R. Adam.
26 Distribution of Trachoma in the State of Victoria. J. W. Barrett and W. F. Orr.
27 *Abdominal Crises in Diabetes. R. M. Downes and R. A. O'Brien.

27. **Abdominal Crisis in Diabetes.**—Downes and O'Brien report two cases which suggest that a condition resembling abdominal crisis, apparently requiring operation, may occur in diabetes. They claim that a routine test for sugar in the urine in all acute surgical abdominal cases is not sufficient, for diacetic acid and acetone may be present in the absence of sugar in the urine. The first case was at first regarded as one of acute intestinal obstruction. The patient complained of pain in the lower abdomen, extending right across, and this pain had apparently gradually increased in severity. Bowels had not been open for about thirty-six hours—not even to flatus. Vomiting occurred three or four times during the day, and about two hours before admission the patient became very restless, with a rather vacant expression, and his mental condition became progressively duller, so that he was only semi-conscious on admission, and quite unable to answer any questions rationally. It was known that he had suffered from diabetes mellitus for the past eighteen months.

When about to operate it was found that one drop of urine markedly reduced Fehling's solution, and that the test with ferric chlorid for aceto-acetic acid was positive, so that it was considered wiser not to operate. The patient was sent back to the ward and given rectal injections of sodium bicarbonate solution every four hours. His bowels were slightly open a few hours later. He was given sodium bicarbonate—an ounce to a pint—intravenously, also rectal injections of half a pint, containing sodium bicarbonate (half an ounce) with dextrose (a dram) every four hours. He had two hourly drinks containing sodium bicarbonate half an ounce. At first his condition improved, but later the coma increased, and he died the next morning. At the post-mortem examination nothing abnormal was found in the gastrointestinal tract; the pancreas was small, atrophic and firm, but no microscopic examination was made; the kidneys were rather large, no other pathologic conditions being apparent. A younger brother, also a diabetic, died with rather similar symptoms.

The second patient, a girl, had been on strict diet for two months, with entire disappearance of sugar. Limited carbohydrate (toast) added to the diet, caused immediate reappearance of sugar (1.25 to 2.25 per cent., acid 1030, 21 to 40 ounces per day). Milk and toast were withheld, and the sugar immediately disappeared. Finally the patient vomited several times, and looked ill, complaining of intermittent paroxysms of abdominal pain. A late afternoon specimen of urine contained some diacetic acid and a slight trace of acetone. She was given a high enema, with return of a fair quantity of feces. Late that evening she complained of severe pain over the right kidney, traveling toward the labia. Early the following morning there was constant vomiting, with pulse 140, temperature 99.4 F. General tenderness over abdomen, dulness to deep and light percussion over lower abdomen, below a line joining the anterior superior spines, convex upward, and passing through the umbilicus, resonant in flanks, slight distention of upper abdomen, and greatly decreased liver dulness, no rigidity or lessened respiratory movement. Leucocytes, 47,000 and 50,000 (two counts). Some diacetic acid and acetone were present. A diagnosis was made of acute intestinal obstruction of some undetermined kind, probably causing autointoxication with production of diacetic acid and acetone. Later the abnormal abdominal dulness entirely disappeared. In the intervals of pain she was very sleepy, and almost semi-comatose.

It was decided that the child had had an abdominal crisis of unexplained origin, occurring in a diabetic, and, as only 2 drams of sodium bicarbonate out of 6 given by rectum during the morning had been retained, one pint of normal saline, with one dram of sodium bicarbonate were directed into the median basilic vein in forty-five minutes. Marked improvement in color and a drop in pulse rate to 144 was noticed within ten minutes of the insertion of the cannula. Vomiting ceased immediately. The first urine passed was strongly acid. She took 2 ounces of sodium bicarbonate in milk during the next eighteen hours, after which the urine became alkaline, diacetic acid and acetone gradually lessening, disappearing in a period of ten days, though sugar reappeared on a relaxed diet. Further course was uneventful.

Journal of Laryngology, Rhinology and Otology, London

October

28 Sarcoma of the Nose. J. Price-Brown.
29 Otosclerosis and Autointoxication. P. Cornet.
30 Labyrinthine Suppuration. A. Politzer.
31 Entotic Tinnitus. H. B. Tawse.

Dublin Journal of Medical Science

October

32 Pathologic Report of Rotunda Hospital for Year Ending Oct. 31, 1908. R. J. Rowlette.
33 Retroperitoneal Sarcoma. G. J. Johnston.
34 Outbreak of Typhoid Fever at Clontarf (Dublin County Borough). D. E. Flinn.

Annales de l'Institut Pasteur, Paris

September, XXIII, No. 9, pp. 665-743

35 *Immunization of Cattle and Horses Against Tuberculosis. (Vaccination du cheval. Essai de sérothérapie. II.) H. Vallée.
36 Experimental Basis for Preventive Vaccination Against Bacillary Dysentery. C. Dopter.
37 Intestinal Tuberculosis in Cattle. (Tuberculose intestinale chez le bœuf.) P. Chausse.
38 Biology of Vaccine Virus. Répin.
39 Intracellular Parasite in the Partridge of Indo-China. (Leucocytozoon de la perdrix du Tonkin.) M. Leger and C. Mathis.

35. Vaccination Against Tuberculosis.—Vallée reports what he thinks were the first attempts to hyperimmunize the horse by means of living tubercle bacilli, human or bovine. Of the 11 horses injected in the course of five years, 3 died accidentally and 4 were slaughtered, but not a trace of tuberculosis could be detected in any, while the serum of all had evidently acquired limited specific qualities, adapting it for human vaccination. About 100 tuberculous patients have been vaccinated with the horse immune serum thus obtained, with no mishaps, the results encouraging its further use.

Annales de Médecine et Chir. Infantiles, Paris

October 15, XIII, No. 20, pp. 685-720

40 The New-Born Infant. (Le nouveau-né.) E. Périer and E. Gaujoux.
41 *Blunders in Diagnosis in Respect to Intestinal Helminths. (Des erreurs de diagnostic pouvant survenir à l'occasion de vers intestinaux.) Baros.
42 Benefit from Polyvalent Antidysentery Serum in Dysentery in Children. P. Coyne and B. Auche.

41. Blunders of Diagnosis from Intestinal Worms.—In the first case reported, a young man, a plasterer, had a tendency to mild epilepsy in early childhood but had outgrown it. He applied for relief from symptoms suggesting a serious heart affection, chills, cough, dyspnea, epistaxis, pulse very slow, slight fever, and abnormal heart sounds. Revulsion was applied to the heart region, and strophanthus and calomel were given, but the dyspnea increased with extreme oppression, staccato respiration, pulse of 43 and subnormal temperature; the face flushed and paled alternately. An enema brought a large ascaris and after a course of santonin all symptoms vanished. In the other case, the stools of a little girl, during a gastroenteritis, contained numbers of ovoid vesicles, supposed to be the ova of some unknown helminth until the microscope revealed that they were orange pulp cells.

Bulletin de l'Académie de Médecine, Paris

October 12, LXXIII, No. 32, pp. 167-192

43 *General Anesthesia by the Spinal Technic. (Rachianesthésie générale.) T. Jonnesco.

43. General Anesthesia by the Spinal Route.—Jonnesco does not consider it necessary to restrict the puncture to the lumbar region, but the chief innovation in his technic is the admixture of strychnin with the anesthetic which, he says, seems to annul its toxicity.

Presse Médicale, Paris

October 16, No. 83, pp. 729-736

44 *Benefit fr[illegible] Infection in Tuberculous [illegible]s réactions digestives des leuc[illegible]ssinger.

October 20, No. 84, pp. 737-744

45 Louis, the Father of Medical Statistics. (La méthode numérique en médecine.) A. Chauffard.
46 Lordosis not Sole Cause for Orthostatic Albuminuria. G. Schreiber.

44. Benefit from Secondary Infection in Tuberculous Processes.—The young man in the case reported presented symptoms of tuberculous purulent pleurisy of acute onset but becoming torpid with encysted pneumothorax. The effusion was evacuated occasionally and signs of secondary infection with the *Staphylococcus aureus* were discovered in a few months. This transformed the torpid tuberculous process and a cure followed. The secondary infection in this case evidently attracted increased numbers of polynuclears and their active ferment dissolved the tuberculous masses and permitted their absorption. After this digestion by the ferment, the tubercle bacilli in the focus were overcome by the natural defenses of the body.

Semaine Médicale, Paris

October 13, XXIX, No. 41, pp. 481-492

47 *Protrusion in Supraclavicular Fossa as Sign of Excessive Amount of Blood. (La voussure sus-claviculaire comme signe de la pléthore.) C. Trunecek.

October 20, No. 42, pp. 493-504

48 Paroxysmal Tachycardia and Arrhythmia. (Battements de cœur et arythmies.) H. Vaquez.
49 Treatment of Varices by "Intramuscular Inclusion of the Veins." M. Katzenstein.

47. Protrusion in Supraclavicular Fossa as Sign of Plethora.—Trunecek calls attention to the marked protrusion of the supraclavicular fossa when the vascular system contains an excessive amount of blood. This plethora is not so evident in the stronger-walled arteries as in the veins, and it is most evident where the veins are large and especially in the supraclavicular fossa. As the veins here dilate, the pressure from the excessive distention elsewhere on the parenchymatous organs is correspondingly reduced. There is no protrusion at this point when there is merely engorgement of blood in part of the vascular system; it appears only when the plethora is general, and generally is a sign that venesection is required. When sufficient blood has been withdrawn the protrusion subsides.

Archiv für klinische Chirurgie, Berlin

XC, No. 4, pp. 865-1102. Last indexed Oct. 16, p. 1339

50 Phenomena Observed aft[illegible] Stomach and Intestines [illegible] künstlicher Fortnahme [illegible] zuges, andererseits des [illegible] tractus des Hundes.) A. Hoffmann.
51 *Treatment of Paralysis from Spondylitis. (Behandlung [illegible] Gaugele.
52 *Tr[illegible] robleme zur Behandlung [illegible] Krukenberg.
53 *Ca[illegible] A. Zinner.
54 *Ex[illegible] ent of Gastric Ulcer. [illegible] Resection bei Magen- [illegible]
55 *Tr[illegible] Vault of Skull. (Zur Frage der Trepanation bei traumatischen Verletzungen des Schädeldaches.) M. M. Kusnetzow.
56 Alcohol and Iodin Disinfection of Hands and Field of Operation. (Desinfection der Hände und des Operationsfeldes mit Alkohol und Jodtinctur.) I. I. Grekow.

51. Treatment of Spondylitic Paralysis.—Gaugele declares that slow gradual reduction of the hump has proved extremely effectual in his experience in the cure of paralysis resulting from the deformity. He applies the correcting force after the child has been encased in a plaster cast reaching from the buttocks to the chin. The force is applied by means of a perpendicular screw in the top of a right-angled frame screwed to the table on which the child lies. A metal plate, cushioned with felt, is interposed between the hump and the correcting screw and the child rests on two concave cross-bars but does not feel them through the plaster cast. Gaugele has applied the correction 140 times in thirty cases, and has had a mishap in only one instance—a boy of 13 experienced transient tenesmus and weakness of the legs, but this was before the present dosage of the force had been adopted. He relates the details of a number of the cases in which complete paralysis or paresis was entirely cured by this simple technic which allows the children to be up and about, besides other advantages. The two cases of which illustrations are given show excellent results; the hump had existed for four and six years.

52. Treatment of Deformities.—Krukenberg thinks that sufficient attention is not paid to weight-bearing as a factor in the aggravation of commencing deformities. If a post stands squarely on top of another post of the same diameter, pressure from above will hold the posts all the more securely, but if the top of the lower post is pushed out of plumb, pressure from above only aids in pushing the lower post farther out of the perpendicular, and the lower end of the upper post follows until the juxtaposed ends form an angle instead of a straight line. If the bottom of the lower post can then be tilted in such a way as to bring the plumb-line still through the center of the juxtaposed ends of the posts, pressure from above will still hold them together and tend to correct the position back into the single vertical line. This is the principle which he applies in correction of genu valgum and genu varum and other deformities, and with which he has obtained good functional results. Uncorrected, the deformity is being constantly aggravated by the weight-bearing pressure. He gives mathematical diagrams to explain the principle more fully and to show its application to various deformities. For flatfoot, a stirrup-like projection from the sole of the shoe, between the heads of the metatarsal bones and the tuberosity of the calcaneus, prevents the foot from being planted with the weight in the center; the weight has to be thrown either on the toes or on the heel, each of which positions corrects the tendency to flatfoot and puts an end to the flatfoot disturbances. Thirty-two illustrations accompany the article, showing the application of functional correction in this way to various deformities.

53. **Rectal Cancer.**—Zinner reports the ultimate outcome of 320 cases of rectal cancer in which an operation was done at Hochenegg's clinic since 1887. Permanent cures were realized in 25 per cent. of the 256 cases with an interval of more than three years. He gives summaries of 201 cases. His experience indicates that a complete cure is possible with any form of epithelial cancer, so that the anatomic variety is of comparatively little moment in comparison to the clinical course.

54. **Operative Treatment of Gastric Ulcer.**—Payr has treated gastric ulcer with resection or excision in seventeen cases since 1902, and states that the indications must be strictly individualized for each case but, other things being equal, that resection guarantees better results than excision. He urges the necessity for keeping record of the after-history of such patients to determine the technic ensuring the most favorable end-results, and whether resection and excision promise results superior to gastroenterostomy enough to justify their more common use.

55. **Trephining After Traumatic Injury of the Vault of the Skull.**—One of the eleven patients whose cases are reported by Kusnetzow was a woman of 70; the others were men. Each had a compound fracture of the vault of the cranium. When splinters are driven inward, the earlier the operative intervention the better the results; with simple fracture it is not indicated unless there are brain symptoms, and with simple fissure injuries expectant treatment is justified if the patient can be kept under constant supervision. Primary trephining is better for various reasons than when done secondarily. In case meningitis develops, the best treatment is by broad exposure of the field, by removal of large pieces of the skull bones, and introduction of absorbent tampons under the opened dura. When an operation has been done for cranial injury, the patients should be kept under observation for years to note the condition of the central nervous system in after years. Injuries of the frontal lobe are liable to entail a peculiar change in the character and temperament, a tendency to silly joking. *Witzelsucht*, the Germans call it.

Beiträge zur Klinik der Tuberkulose, Würzburg

XIV, No. 2, pp. 97-257. Last indexed Oct. 9, p. 1240

57 *Experiences with Spengler's I K in Pulmonary Tuberculosis. Alexander.
58 *Modification of the Death-Rate Studied from Standpoint of Progress of Civilization. (Wandlungen der Sterblichkeit im [illegible] Köhler.
59 Granı [illegible] ;tain. (Ueber die [illegible] Tuberkulose-virı [illegible] ıon.
60 *Diagnosis of Human Tuberculosis by Anaphylaxis. Roepke and Busch.
61 Ac [illegible] 'al Glands without Clinical [illegible] liger Bronchialdrüsentuber- [illegible] A. Heisler and H. Schall.
62 *Specific Precipitin [illegible] and Influence o [illegible] I K [illegible] Spenglerschen [illegible]

57. **Spengler's I K in Treatment of Pulmonary Tuberculosis.**—Alexander reports indifferent results in the 11 cases in which this treatment was systematically applied. It proved by no means so harmless as Spengler claims, a febrile reaction being frequent with minute dosage.

58. **Modifications in the Death-Rate with the Progress of Civilization.**—Köhler cites historical records to show the conditions in regard to public health and hygiene in Germany from the thirteenth century to date. There are no records of the death-rate before that time. The wars and dispersion of troops at the close of campaigns contributed to the spread of epidemics, fully one-fourth of the population of Europe succumbing to the plague in 1347-1350. He states that at the beginning of the thirteenth century there were 19,000 leper asylums. Until the beginning of the fourteenth century there was no such thing as a medical profession, the care of the sick being almost exclusively in the hands of the priests or barbers. But as a medical profession became organized the members early acquired influence and many privileges in the cities, and city physicians were appointed. From this period hygienic conditions began to improve and the death-rate to decline.

60. **Diagnosis of Tuberculosis by Anaphylaxis.**—Roepke was unable to confirm Yamanouchi's statements in regard to the diagnostic value of the anaphylactic reaction in tuberculosis. (His statements were summarized in The Journal, Jan. 9, 1909, page 172.) Roepke is inclined to attribute Yamanouchi's findings to the preservative in the tuberculin used for the tests, as he was able to elicit the anaphylaxis reaction with a carbolic-acid solution alone.

62. **Spengler's I K in Pulmonary Tuberculosis.**—This communication issues from Spengler's laboratory at Davos and the findings in 1,200 examinations of blood mostly from different persons, are presented in tabulated form with the clinical experiences and conclusions in regard to the influence on the "blood-cell immunity" of I K and tuberculin. Eleven tables of curves are given showing the findings in regard to human and bovine tubercle bacilli under the influence of this specific treatment. The conclusions confirm, he asserts, his previous announcements in regard to the red blood corpuscles being the producers and storehouses of the immune bodies. (I K stands for *Immun-Körper*, "immune bodies.")

Berliner klinische Wochenschrift

October 11, XLVI, No. 41, pp. 1838-1876

63 *Appearance of Albumin and Tube-Casts in Urine with Chronic Constipation. (Auftreten von Albuminurie und Cylindrurie bei chronischer Koprostase.) W. Ebstein.
64 Chlamydozoa in [illegible] Neonatorum. L. Halberstaedter
65 Cobra Venom Te [illegible] ie Ablenkung der Kobragifthämc [illegible] L. Omorokow.

63. **Albuminuria and Tube-Casts with Chronic Constipation.**—Ebstein always found the tube-casts few, small and hyaline when they were due to chronic constipation. In one such case a woman had been referred to him for chronic nephritis with hypertrophy of the heart, but all the symptoms subsided when the existing constipation was relieved, and there have been no signs of nephritis during the ten years since. The grave prognosis in this case had been based on the tube-casts and the fat granules clinging to them and the frequent, intense headache supposed to be a symptom of uremia. The toxins developed in constipation irritate the surface of the tubules in the kidneys, without injury of the parenchyma and interstitial tissue, but whether actual nephritis can develop merely from chronic constipation is still a question. It is certain, however, that in case of actual nephritis or other severe infections every effort must be made to put an end to autointoxication from chronic constipation. For this he has found large oil enemas the most effectual means. In some recent cases of severe diabetes the albuminuria vanished when the constipation was relieved, and even the glycosuria has materially subsided under appropriate diet. In all such cases the prognosis should not be made until the effects of constipation have had time to subside.

Deutsche medizinische Wochenschrift, Berlin

October 21, XXXV, No. 42, pp. 1817-1864

66 *Treatment of Contracted Pelvis and Indications for Pelvis-Enlarging Operations. (Behandlung des engen Beckens.) J. Veit.
67 *Indications and Technic for Puncture of the Pleura. H. Hochhaus.

68 *The Epidemic of Acute Infantile Spinal Paralysis. P. Krause and E. Meinicke.
69 *Seroreaction in Idiots. (Wassermannsche Reaktion bei Idiotie). Kellner, Clemenz, Brückner and Rautenberg.
70 Negative Results of Serotherapy of Pneumonia in Children. (Kinderpneumonie und Pneumokokkenheilserum.) H. Brüning.
71 Negative Results of I K in Treatment of Tuberculosis. O. Roepke, H. Weicker and B. Bandelier.
72 *Objective Index of Condition of Nourishment. (Versuch zur objektiven Darstellung des Ernährungszustandes.) K. Oppenheimer.
73 Placenta Praevia. M. Hirsch.

66. **Indications for Treatment of Contracted Pelvis.**—Veit discusses the various measures in vogue among obstetricians and the indications for them according to the most recent published data and his own experience. He summarizes as follows his views in regard to the indications: Avoid all measures during pregnancy and in prophylaxis. Operate only in strictest necessity. Cesarean section should be done with an absolute contracted pelvis. With moderately contracted pelvis, in case of peril to the mother, forceps may be allowable in a few cases but otherwise Cesarean section is indicated. Pubiotomy is indicated in case of fever and streptococci in the birth passage. Version should be performed in case of peril to the child; Cesarean section only when version or forceps is impossible. All other operative measures should be rejected, as a rule, although they may be occasionally justified in special cases.

67. **Indications and Technic for Puncture of the Pleura.**—In concluding his article Hochhaus mentions that he has applied in a few cases Gilbert's method of autoserotherapy, reinjecting at another point a small amount of the effusion aspirated. The results were not conclusive in his hands but he adds that they have been satisfactory in the experience of others, although not so striking as those realized by Gilbert.

68. See Berlin letter, The Journal, Nov. 6, 1909, page 1575.

69. **Seroreaction in Idiots.**—Kellner states that among 216 idiots tested for syphilis by the Wassermann technic, a positive response was obtained in only 16. Some French writers have recently published a series of 76 positive responses in 246 idiots tested. Kellner thinks that the rarity of positive findings in his series shows that syphilis is not an important direct factor in the etiology of idiocy. Among the 16 giving a positive response to the Stern modification of the Wassermann technic, only 6 were free from signs of inherited or acquired syphilis, while the other 10 were in the group of 16, who were the only known syphilitics among the 800 idiots in the institutions investigated.

72. **Objective Index for the State of Nourishment.**—Oppenheimer says that he has long felt the need of some means to express objectively the actual condition of the patient in regard to nourishment, the significance of the terms "well" and "poorly nourished" varying with each speaker. After years of investigation he announces that the chest measure, taken at the nipples, multiplied by the circumference of the middle of the upper arm and divided by the height, gives a "nourishment measure" which is small in the poorly-nourished and large in the well-nourished and can thus serve as an index for the conditions in this respect. A still more exact index is the quotient of the chest measure divided by the arm measure; this he calls the "nourishment quotient." In a group of 123 well-nourished persons, the "nourishment measure" was 6.6 and the "nourishment quotient" 31.2 in 31 new-born *infants*; 8.5 and 31.4 in 34 older infants; 9.1 and 30.9 in 8 children, and 14.27 and 29.8 in 50 soldiers. In 110 moderately well-nourished infants and children the measure ranged from 5.9 to 9.3 and the quotients from 27.5 to 29.3. In 26 poorly nourished infants and children the measure was 5.6 to 7.1, and the quotient 25.9 to 27.1, while they were respectively 11.7 and 26.2 in 28 adult consumptives. Comparison of extensive series shows that the "nourishment measure" increases with the age but that the "quotient" is independent of the age and is a more exact index of the true relative condition of nourishment. The great drawback of the method is that it cannot be applied to women on account of the development of the breasts, and that a contracted thorax gives measurements liable to be misleading. In the 50 soldiers examined, the nourishment quotient averaged 30, the average chest measure being 92.1 cm. and the arm measure 27:4 cm., with an average height of 176.7 cm.

Deutsche Zeitschrift für Chirurgie, Leipsic

October, CI, Nos. 5-6, pp. 413-606

74 Ivory Prothesis for Lower Jaw. (Ersatz einer exartikulierten Unterkieferhälfte durch die König-Roloffsche Elfenbeinprothese.) P. Sudeck.
75 Involvement of Bone in Pavement Epithelium Cancer. (Auf Knochen übergreifende Plattenepithelkrebse.) T. Nakahara.
76 Experiences with Nail Extension. (Erfahrungen mit der Nagelextension.) W. Anschütz.
77 Abnormal Ossification in Cretin Skeleton. (Zur Kenntnis der Wachstumsstörungen am Kretinenskelett.) A. Läwen.
78 Primary Sarcoma of Knee Capsule. (Ein primäres Sarkom der Kniegelenkskapsel.) H. Burckhardt.
79 Carcinoma in Jejunum. (Ein hochsitzendes Carcinom des Jejunums.) Aizner.
80 Two Cases of Primary Gastric Sarcoma. (Primärer Magensarkom.) F. Lofaro.
81 Operative Treatment of Serratus Paralysis. (Beitrag zur Operativen Behandlung der Serratuslähmung.) E. Enderlen.
82 Influence on Thyroid of Removal of Pancreas in Dogs. (Einfluss der Exstirpation des Pankreas auf die Schilddrüse.) C. Licini.
83 Outward Dislocation of Lower Jaw. R. Rube.
84 Abdominal Injuries in Troops During Peace. (Ueber die Bauchverletzungen in der Königl. Preussischen Armee, den Sächsischen und dem Wurttembergischen Armeekorps in den Jahren 1896-1906). Thöle.
85 Operative Bladder Hernia. (Das Hervorziehen der Harnblase *bei Hernienradikaloperationen.*) F. Brunner.
86 Exostosis on Plantar Aspect of Calcaneus. (Ueber den sogenannten Calcaneussporn.) E. Boerner.

Fortschritte der Medizin, Leipsic

October 20, XXVII, No. 29, pp. 1089-1120

87 *Stab Wounds of the Liver. (Stichverletzungen der Leber.) A. Nehrkorn.

87. **Stab Wounds of the Liver.**—Nehrkorn operated on three patients with stab wounds of the liver in the course of a few weeks in 1905. The injury was made with a knife *with suicidal intent in one case*, but it soon healed without complications. In another case a boy of 9 was impaled on an iron spike; the wound in the liver soon healed, although a hernia at the point where the drain had been inserted required a second operation three years later. In the third case *a man fell on a tool* he was carrying. The wound in the liver in all these cases was drawn up with two or three sutures. An empyema developed in the third case and a series of complications followed, but with final restoration to comparative health.

Jahrbuch für Kinderheilkunde, Berlin

October, LXX, No. 4, pp. 391-528

88 The Law of Energy in Human Physiology. (Das Energiegesetz in der menschlichen Physiologie.) W. Camerer.
89 The Differences Between Human and Cow's Milk. (Beitrag zu den Unterschieden zwischen Kuh- und Menschenmilch.) A. Schwarz.
90 Pathologic Anatomy of Atrophic Condition in Infants. (Zur pathologischen Anatomie der Pädatrophie—Dekomposition.) H. F. Helmholz.
91 Body Dimples on Children. (Hautgrübchen am Kinde.) W. Knoepfelmacher.

Medizinische Klinik, Berlin

October 10, V, No. 41, pp. 1539-1578

92 Cataract Operations. (Ueber Star- und Nachstar-Operationen.) C. Hess.
93 Application of "Optic Method" to Immunity Research. [illegible] ischen Methode" auf dem Gebiete der [illegible] E. Abderhalden.
94 *Ve[illegible] Embolism of Pulmonary Artery. R. Kretz.
95 *Diagnosis and Treatment of Enlargement of Prostate. P. Wulff.
96 *Headache and Syphilis. (Kopfschmerzen und Syphilis.) Pickenbach.
97 Explanation of Action of Ferments. (Zur Klärung der Fermentwirkung.) Scherk.
98 Cystoscope Snare. (*Verbessertes Operationszystoskop zur* endovesikalen Entfernung von Blasentumoren.) H. Lohnstein.
99 Measurement of Radium Emanations. (Zur Messung der Emanation.) W. D. Lenkei and E. Weiss.

94. **Venous Thrombosis and Pulmonary Embolism.**—Kretz has been able *to find some primary infectious focus in every* case of fatal pulmonary embolism from primary thrombosis. In some cases the walls of the vein are inflamed but in others infection of the blood is responsible for the intravascular coagulation.

95. **Treatment of Enlargement of the Prostate.**—Wulff calls attention to the fact that sometimes it is impossible to palpate the prostate causing disturbances; in two such cases the gland was even abnormally small, and yet prostatectomy was followed by a clinical cure. Such cases reduce the impor-

tance for examination of the prostate by way of the rectum. The most important means for diagnosis is the discovery by catheterization of residual urine. When there is no trace of this, the disturbance is usually due to neurasthenia or kidney disease. In one such case a man of 70 had pus in the urine and signs of enlargement of the prostate, but the absence of residual urine led to discovery of a tuberculous process in the right kidney. In another case a man of 55 was referred to Wulff for prostatectomy after fifteen years of symptoms; ligation of the vasa deferentia ten years before had failed to benefit. The trouble proved finally to be tabes. In another similar case a man of 50 had complete retention about twice a year but no residual urine and he was advised against an operation. The diagnosis was cleared up by other signs later of a nervous affection. After discovery of residual urine, the nervous system should be examined and the prostate palpated through the rectum to exclude cancer and tuberculosis. Cystoscopy is generally unnecessary. A careful examination should also be made for a calculus; the presence of stones for years in the bladder may cause no symptoms. The bowels must be kept open and regular, to prevent aggravation of prostatic trouble. Extreme care should be taken not to "catch cold," as this is especially liable to induce cystitis. Such patients should sleep in a warm room in winter and should wear woolen stockings and underwear. Wulff deprecates the dread of the catheter. If infection, hemorrhage and debility compel surgical measures, the only treatment is prostatectomy; partial operations are inadvisable.

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Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

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106 Cobra Venom Reaction in the Insane. (Die Muchsche Hemmungsreaktion bei Geisteskranken.) Nitsche, H. Schlimpert and H. Dunzelt.
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107. **Early Diagnosis of Measles.**—Hecker has noticed a marked reduction in the total number of leucocytes as an early sign of measles infection, sometimes fully ten or eleven days before Koplik's spots became evident, but as a rule from one to three days before the development of the spots. There was a reduction also in the numbers of lymphocytes during the incubation of measles, and from three to five days before the spots developed. There seems to be actually a disappearance of lymphocytes with a slight increase in the neutrophiles. This premonitory reduction in the numbers of lymphocytes and the reduction in the total numbers of leucocytes just before the appearance of the eruption may prove important for early differentiation of measles in institutions.

108. **Static Disturbances in the Feet.**—Tausch has had occasion to study in his own person a disturbance in the foot which causes great discomfort with scarcely any objective

findings. The foot is inclined to assume the valgus position when bearing weight and it tires readily. The fatigue is felt more in the calf of the leg than in the foot itself and pain develops similar to that of phlebitis, for which it is often taken. The pain persists even after retiring. It may extend into the thigh or buttocks and may simulate neuralgia. Various muscles become involved as the insufficiency of the muscles of supination increases. Treatment should include the wearing of proper shoes, strengthening the supination muscles with gymnastic exercises, learning to plant and raise the foot normally, supplemented by mechanical means to restore normal static conditions in the foot, correcting the pronation angle and supporting the arch until the foot is brought from the valgus position into supination, placing it on a slanting plane provided by an insole made from a cast of the foot taken while it is bearing the weight of the body. With a correct insole, the stiff joint mobilized with gymnastic exercises, and the atrophied muscles strengthened, all disturbances vanish at once, and the patients are relieved from what seemed to be an incurable and tormenting affection. Tabes had been assumed in some of the cases to which he refers.

110. Radiotherapy of Tuberculous Bone Processes.—Freund discusses the advantages of heliotherapy in treatment of these lesions, supplemented by radium and Roentgen treatment on days without sufficient sunshine. His experience has been favorable.

112. Geographical Distribution of Diabetes.—Williamson's figures show that the mortality from diabetes per 100,000 inhabitants ranges from 6.6 to 12.7 in the different cities of England and Wales, with a general average for the country of 9.6; in Malta and Gozo, 37.8. In Europe the extremes are 5 in Helsingfors, 4.5 in Italy to 15.8 in Copenhagen, 20 in Berlin and 25.8 in Bordeaux; in Asia, from 0.15 in Hong Kong to 9.2 in Calcutta; in America, from 5.8 in the province of Quebec to 27.3 in Worcester, Mass., with 17.4 in New York, 10.7 in Chicago and 17.9 in Boston, and a general average for the United States of 13.9; for Australia of about 8; for Buenos Aires, 5.6, and Cuba 2.8. His research, he states, shows that the disease is gradually increasing. Men are more frequently affected than women in most localities.

Gazzetta degli Ospedali e delle Cliniche, Milan

October 14, XXX, No: 123, pp. 1297-1304

113 *Suture Through Laparotomy of Severed Ureter over Retention Catheter. (Sutura per via addominale dell' uretere sinistro sopra catetere permanente dal rene in vescica.) A. Boari.

October 17, No. 124, pp. 1305-1320

114 Granules in Leucocytes in Gonorrhea, Taking Sudan Stain. (Le granulazioni sudanofili dei leucociti nel sangue dei blenorragici.) G. Sarra.

October 19, No. 125, pp. 1321-1328

115 Difference Between the Temperature of the Axillæ in Tuberculous Patients. (Differenze tra le due temperature ascellari nei polmoniti.) L. Casali.

October 21, No. 126, pp. 1330-1336

116 Surgical Treatment of Jacksonian Epilepsy. T. Clemente.

113. Suture of the Ureter.—Boari introduces a catheter into the ureter and merely approximates the stumps of the ureter over the catheter, joining the stumps together with interrupted sutures without invaginating one stump into the other which is almost sure to entail stenosis. The retention of the catheter in the ureter caused no disturbances, although it projected for nearly three inches into the bladder in the case described. After allowing ten days for the suture of the ureter to heal, he extracted the retained catheter with the aid of the cystoscope, and there has been nothing to suggest any anomaly in the ureter during the two years since. A catheter passed through the ureter up into the kidney meets with no obstacles. The ureter was injured in his case during a hysterectomy.

Policlinico, Rome

October 10, XVI, No. 41, pp. 1285-1316

117 *Hemolytic Jaundice and Syphilitic Infection. (Gli itteri emolitici e l'infezione sifilitica.) G. Basile.

118 *Tabes Dorsalis. (Sopra un caso di tabe dorsale.) E. Fenoglietto.

117. Jaundice from Hemolysis: Syphilitic Origin.—Basile refers to the jaundice in which the trouble is evidently the result of extra fragility on the part of the red corpuscles. Autopsy in the few such cases examined post-mortem disclosed that the liver and biliary passages were intact. Syphilitic infection may be responsible for the extra fragility of the corpuscles in some of these cases.

118. Tabes Dorsalis plus Morphin Addiction.—The gastric crises in the case reported were followed by intestinal crises, sometimes brought on by a purgative or enema. The tabes developed in this case as early as five years after primary syphilitic infection, and mercurial treatment seemed to have a favorable influence in reducing the frequency and severity of the crises.

Policlinico, Rome

October, XVI, Surgical Section, No. 10, pp. 429-476

119 Sarcoma as Recurrence of Carcinoma in the Thyroid. F. Nassetti.

120 *Organic Free Bodies in Hernial Sac and in Peritoneal Cavity. (Dei corpi organizzati nei sacchi erniari e nella cavita peritoneale.) G. Palazzo.

120. Organic Free Bodies in Hernial Sac and Peritoneum.—Palazzo gives the details in tabulated form of 18 cases from the literature in which an organic body was found free in a hernial sac, and of 31 others in which a similar organic body was found free in the peritoneum. In 2 cases personally observed the organic body found non-adherent in the hernial sac was a fragment of omentum, evidently detached from a fold of the omentum included in the hernia at first. He further describes experiments on dogs and guinea-pigs striving to induce the production of an organic foreign body in the peritoneum by injection of fresh fibrin or extract of organs with an internal secretion, or of dead micro-organisms liable to induce precipitation of fibrin. The results were constantly negative.

Riforma Medica, Naples

October 11, XXV, No. 41, pp. 1121-1148

121 Central Neuropathies of Malarial Origin. (Anartria, convulsioni epilettiformi, sindrome cerebellare.) E. Grande.

October 18, No. 42, pp. 1149-1176

122 *Differentiation, Prophylaxis and Treatment of Septicemic Fevers. (Sulle febbri e febbricole setticemiche polimorfe. XI.) G. Rummo. Commenced in No. 41.

123 Mixed Cirrhosis. (Contributo clinico ed anatomo-pathologico allo studio delle cirrosi miste.) T. Casoni.

122. Differentiation of Typhoid, Paratyphoid and Malta Fevers.—Rummo tabulates for comparison the various clinical features of these fevers. In the last two the spleen does not become enlarged, or only slightly, late in the disease, while there is generally obstinate constipation and the fever starts with abrupt onset and a chill, without prodrome, while the type is altogether different from the typhoid curve. He warns, however, that in all three the prognosis should be guarded. The general idea that paratyphoid and Malta fever are benign affections is frequently shown to be erroneous by the serious form which they sometimes assume. In Malta fever in particular, the disease may drag along to such an extent that it may be regarded as the one of the trio which is liable to try the patience most of both patient and physician. Early differentiation of typhoid is of the greatest importance as otherwise household remedies may be applied which are liable to do irreparable harm. The diet may be a little less exclusive in paratyphoid and Malta fever than in typhoid, but he warns that convalescence from typhoid is like a new disease which has to be supervised and combated, mainly on account of the impatience and appetite of the patient and the heedlessness of his friends. Nothing but milk should be allowed, he declares, for a week after defervescence.

Hospitalstidende, Copenhagen

September 1, LII, No. 35, pp. 1081-1104

124 *Roentgen-Ray Treatment of Skin Diseases. (Behandling af Hudsygdomme med Röntgenstraaler.) A. Reyn. Commenced in No. 34.

September 8, No. 36, pp. 1105-1136

125 Two Cases of Gas Constantly in the Urine. (To Tilfælde af Pneumaturi.) E. Sørensen.

126 Successful Thyroid Treatment in One of Two Cases of Dementia Præcox. P. Levison.

September 15, No. 37, pp. 1137-1168

127 Serum Anaphylaxis in Forensic Tests of Blood. (Fortsatte Undersøgelser over Blodanafylaxi og denne Reaktions Anvendelse i Retsmedicinen.) O. Thomsen.

128 *"Primary" Tuberculosis of the Spleen. (Milttuberkulose.) C. Permin.

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104. **Suture of Lung for Gunshot Wound.**—Grasmann has found on record 18 cases of injury of the lung treated by suture. The list includes 9 cases of gunshot wounds with recovery of 6 of the patients and 6 stab wounds with 5 recoveries, a fatal case of rupture of the lungs, and 2 cases in which the actual injury is not mentioned. He reports the details of 2 cases from his own experience in which prompt suture of the lung after a gunshot wound was followed by recovery. The indication for operative interference in both was the distention from a pneumothorax and extravasation of blood in the pleura. The patients made a smooth recovery in each case, which he attributes to the complete evacuation of all blood from the pleural cavity.

105. **The Seroreaction in Syphilis.**—Reinhart reports application of the Wassermann test in 1,600 cases. The findings were almost invariably negative in cerebral syphilis but positive findings were constant in syphilitic bone lesions. Of the parasyphilitic affections, paralysis gave the highest proportion of regular serum and cerebrospinal fluid positive findings. In tabes the findings were more frequently positive in the early than in the later phases.

107. **Early Diagnosis of Measles.**—Hecker has noticed a marked reduction in the total number of leucocytes as an early sign of measles infection, sometimes fully ten or eleven days before Koplik's spots became evident, but as a rule from one to three days before the development of the spots. There was a reduction also in the numbers of lymphocytes during the incubation of measles, and from three to five days before the spots developed. There seems to be actually a disappearance of lymphocytes with a slight increase in the neutrophiles. This premonitory reduction in the numbers of lymphocytes and the reduction in the total numbers of leucocytes just before the appearance of the eruption may prove important for early differentiation of measles in institutions.

108. **Static Disturbances in the Feet.**—Tausch has had occasion to study in his own person a disturbance in the foot which causes great discomfort with scarcely any objective

findings. The foot is inclined to assume the valgus position when bearing weight and it tires readily. The fatigue is felt more in the calf of the leg than in the foot itself and pain develops similar to that of phlebitis, for which it is often taken. The pain persists even after retiring. It may extend into the thigh or buttocks and may simulate neuralgia. Various muscles become involved as the insufficiency of the muscles of supination increases. Treatment should include the wearing of proper shoes, strengthening the supination muscles with gymnastic exercises, learning to plant and raise the foot normally, supplemented by mechanical means to restore normal static conditions in the foot, correcting the pronation angle and supporting the arch until the foot is brought from the valgus position into supination, placing it on a slanting plane provided by an insole made from a cast of the foot taken while it is bearing the weight of the body. With a correct insole, the stiff joint mobilized with gymnastic exercises, and the atrophied muscles strengthened, all disturbances vanish at once, and the patients are relieved from what seemed to be an incurable and tormenting affection. Tabes had been assumed in some of the cases to which he refers.

110. Radiotherapy of Tuberculous Bone Processes.—Freund discusses the advantages of heliotherapy in treatment of these lesions, supplemented by radium and Roentgen treatment on days without sufficient sunshine. His experience has been favorable.

112. Geographical Distribution of Diabetes.—Williamson's figures show that the mortality from diabetes per 100,000 inhabitants ranges from 6.6 to 12.7 in the different cities of England and Wales, with a general average for the country of 9.6; in Malta and Gozo, 37.8. In Europe the extremes are 5 in Helsingfors, 4.5 in Italy to 15.8 in Copenhagen, 20 in Berlin and 25.8 in Bordeaux; in Asia, from 0.15 in Hong Kong to 9.2 in Calcutta; in America, from 5.8 in the province of Quebec to 27.3 in Worcester, Mass., with 17.4 in New York, 10.7 in Chicago and 17.9 in Boston, and a general average for the United States of 13.9; for Australia of about 8; for Buenos Aires, 5.6, and Cuba 2.8. His research, he states, shows that the disease is gradually increasing. Men are more frequently affected than women in most localities.

Gazzetta degli Ospedali e delle Cliniche, Milan

October 14, XXX, No. 123, pp. 1297-1304

113 *Suture Through Laparotomy of Severed Ureter over Retention Catheter. (Sutura per via addominale dell' uretere sinistro sopra catetere permanente dal rene in vescica.) A. Boari.

October 17, No. 124, pp. 1305-1320

114 Granules in Leucocytes in Gonorrhea, Taking Sudan Stain. (Le granulazioni sudanofili dei leucociti nel sangue dei blenorragici.) G. Sarra.

October 19, No. 125, pp. 1321-1328

115 Difference Between the Temperature of the Axillæ in Tuberculous Patients. (Differenze tra le due temperature ascellari nei polmoniti.) L. Casali.

October 21, No. 126, pp. 1330-1336

116 Surgical Treatment of Jacksonian Epilepsy. T. Clemente.

113. Suture of the Ureter.—Boari introduces a catheter into the ureter and merely approximates the stumps of the ureter over the catheter, joining the stumps together with interrupted sutures without invaginating one stump into the other which is almost sure to entail stenosis. The retention of the catheter in the ureter caused no disturbances, although it projected for nearly three inches into the bladder in the case described. After allowing ten days for the suture of the ureter to heal, he extracted the retained catheter with the aid of the cystoscope, and there has been nothing to suggest any anomaly in the ureter during the two years since. A catheter passed through the ureter up into the kidney meets with no obstacles. The ureter was injured in his case during a hysterectomy.

Policlinico, Rome

October 10, XVI, No. 41, pp. 1285-1316

117 *Hemolytic Jaundice and Syphilitic Infection. (Gli itteri emolitici e l'infezione sifilitica.) G. Basile.

118 *Tabes Dorsalis. (Sopra un caso di tabe dorsale.) E. Fenoglietto.

117. Jaundice from Hemolysis: Syphilitic Origin.—Basile refers to the jaundice in which the trouble is evidently the result of extra fragility on the part of the red corpuscles. Autopsy in the few such cases examined post-mortem disclosed that the liver and biliary passages were intact. Syphilitic infection may be responsible for the extra fragility of the corpuscles in some of these cases.

118. Tabes Dorsalis plus Morphin Addiction.—The gastric crises in the case reported were followed by intestinal crises, sometimes brought on by a purgative or enema. The tabes developed in this case as early as five years after primary syphilitic infection, and mercurial treatment seemed to have a favorable influence in reducing the frequency and severity of the crises.

Policlinico, Rome

October, XVI, Surgical Section, No. 10, pp. 429-476

119 Sarcoma as Recurrence of Carcinoma in the Thyroid. F. Nassetti.

120 *Organic Free Bodies in Hernial Sac and in Peritoneal Cavity. (Dei corpi organizzati nei sacchi erniari e nella cavita peritoneale.) G. Palazzo.

120. Organic Free Bodies in Hernial Sac and Peritoneum.—Palazzo gives the details in tabulated form of 18 cases from the literature in which an organic body was found free in a hernial sac, and of 31 others in which a similar organic body was found free in the peritoneum. In 2 cases personally observed the organic body found non-adherent in the hernial sac was a fragment of omentum, evidently detached from a fold of the omentum included in the hernia at first. He further describes experiments on dogs and guinea-pigs striving to induce the production of an organic foreign body in the peritoneum by injection of fresh fibrin or extract of organs with an internal secretion, or of dead micro-organisms liable to induce precipitation of fibrin. The results were constantly negative.

Riforma Medica, Naples

October 11, XXV, No. 41, pp. 1121-1148

121 Central Neuropathies of Malarial Origin. (Anartria, convulsioni epilettiformi, sindrome cerebellare.) E. Grande.

October 18, No. 42, pp. 1149-1176

122 *Differentiation, Prophylaxis and Treatment of Septicemic Fevers. (Sulle febbri e febbricole setticemiche polimorfe. XI.) G. Rummo. Commenced in No. 41.

123 Mixed Cirrhosis. (Contributo clinico ed anatomo-pathologico allo studio delle cirrosi miste.) T. Casoni.

122. Differentiation of Typhoid, Paratyphoid and Malta Fevers.—Rummo tabulates for comparison the various clinical features of these fevers. In the last two the spleen does not become enlarged, or only slightly, late in the disease, while there is generally obstinate constipation and the fever starts with abrupt onset and a chill, without prodrome, while the type is altogether different from the typhoid curve. He warns, however, that in all three the prognosis should be guarded. The general idea that paratyphoid and Malta fever are benign affections is frequently shown to be erroneous by the serious form which they sometimes assume. In Malta fever in particular, the disease may drag along to such an extent that it may be regarded as the one of the trio which is liable to try the patience most of both patient and physician. Early differentiation of typhoid is of the greatest importance as otherwise household remedies may be applied which are liable to do irreparable harm. The diet may be a little less exclusive in paratyphoid and Malta fever than in typhoid, but he warns that convalescence from typhoid is like a new disease which has to be supervised and combated, mainly on account of the impatience and appetite of the patient and the heedlessness of his friends. Nothing but milk should be allowed, he declares, for a week after defervescence.

Hospitalstidende, Copenhagen

September 1, LII, No. 35, pp. 1081-1104

124 *Roentgen-Ray Treatment of Skin Diseases. (Behandling af Hudsygdomme med Röntgenstraaler.) A. Reyn. Commenced in No. 34.

September 8, No. 36, pp. 1105-1136

125 Two Cases of Gas Constantly in the Urine. (To Tilfælde af Pneumaturi.) E. Sørensen.

126 Successful Thyroid Treatment in One of Two Cases of Dementia Præcox. P. Levison.

September 15, No. 37, pp. 1137-1168

127 Serum Anaphylaxis in Forensic Tests of Blood. (Fortsatte Undersøgelser over Blodanafylaxi og denne Reaktions Anvendelse i Retsmedicinen.) O. Thomsen.

128 *"Primary" Tuberculosis of the Spleen. (Milttuberkulose.) C. Permin.

124. **Roentgen-Ray Treatment of Skin Diseases.**—Reyn reports from the Finsen Light Institute at Copenhagen the experiences with various skin affections treated by Roentgen exposures during the last year. His experience with eczema was extremely favorable, only 17 of the total of 184 patients not displaying more or less marked benefit, amounting to a permanent cure in 88 and in 15 others after a slight recurrence had been treated. The others did not continue the exposures to a complete cure but were satisfied with the results already attained. He regards Roentgen treatment as the most valuable means at our command for eczema rebellious to the ordinary measures perseveringly applied. The affection in some of his cases was from two to five years' standing in 43, from five to ten in 41, and from ten to twenty in 40. The experiences with other cutaneous affections were contradictory, complete cure in some and failure in others. In treatment he uses only from one-half to two-thirds of the S N erythem dose (Sabouraud and Noire radiometer) and fractions it over three days. The series is repeated again if necessary after a pause of three weeks. In 100 cases of epithelioma the results of Roentgen treatment were also encouraging; much larger doses were required, about two erythem doses, S N, fractioned over two days. He appends an extensive bibliography on Roentgen treatment of cutaneous affections.

128. **Primary Tuberculosis of the Spleen.**—Permin's patient was a man of 21 supposedly healthy until a period of languor and depression so extreme that he entered the hospital after two months. During the last week he had also experienced oppression and pain in the left side of the abdomen, soon accompanied by high fever, slight cyanosis, enlarged glands in the neck, axillæ and groins, a solid tumor in the region of the spleen and anemia. The leucocyte picture was approximately normal. The spleen was found studded with tuberculous nodules and was removed, after which all symptoms vanished and the patient returned to work. Parmin reviews the other cases of the kind on record, this being the eleventh in which splenectomy has been done for primary tuberculosis of the spleen, and discusses the differentiating points. At the time of the operation there were no signs of tuberculosis elsewhere but the patient returned to the hospital before the year was out with pleurisy and signs of apical involvement, although the sputum was free from tubercle bacilli. The glands in the neck suppurated, and after their removal pleurisy developed, which ended fatally on the ninth day. The case emphasizes the importance of general measures after the splenectomy to tone up the general health instead of allowing the patient to resume at once his former occupation. It also shows that splenectomy is a comparatively harmless means of freeing the patient from the otherwise fatal tuberculous process in the spleen.

Ugeskrift for Læger, Copenhagen

September 23, LXXI, No. 38, pp. 1049-1070

129 *Origin of Uric Acid. (Fortsatte Undersøgelser over Urinsyrens Oprindelse.) H. Trautner. Commenced in No. 37.

129. **Origin of Uric Acid.**—Trautner reports extensive research which has convinced him that uric acid is the result of proliferation of colon bacilli causing a more or less latent chronic colitis. These bacilli produce reducing substances which undergo chemical changes in the blood and may be the first stages of uric acid. He discusses the medical history of uric acid, the lack of it in young children, of whom he examined 88, and also the lack of colon bacilli in the new-born and in older infants in health. He found both colon bacilli and uric acid in children with intestinal derangement. In examining 25 older children, including 13 with diarrhea, the presence and amount of uric acid in the urine and of colon bacilli in the feces constantly paralleled each other. He also found in experiments on 22 young rabbits that there was no appreciable uric acid in the urine when there were no colon bacilli in the feces, but that the uric acid appeared when the animals were given colon bacilli added to their food. He also examined 32 typhoid patients, 70 patients who had a history of typhoid, and 327 other persons either normal or with other affections. The uric acid disappears from the urine during typhoid more or less completely and the proportion persists low for a long time, suggesting that the typhoid bacilli seem to deprive the colon bacilli of some substance, normally present in the intestines, which they require for their growth. The proportion of uric acid in the urine of a person with a tendency to gout, rheumatism or uricacidemia increases during constipation He found that the fetal uric acid in the new-born disappeared in the course of five days, and that none was detectable thereafter, while there were no colon bacilli at first and they were scanty in the infants' stools later.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

Quain's Elements of Anatomy. Editors, Edward Albert Schäfer, LL.D., Sc.D., F.R.S., Professor of Physiology and Histology in the University of Edinburgh, Johnson Symington, M.D., F.R.S., Professor of Anatomy in the Queen's University of Belfast, and Thomas Hastie Bryce, M.A., M.D., Professor of Anatomy in the University of Glasgow. In Four Volumes. Vol. III, Neurology. By. E. A. Schäfer and J. Symington. Part II. Containing the Descriptive Anatomy of the Peripheral Nerves and of the Organs of Special Sense. Eleventh Edition. Cloth. Pp. 363, with illustrations. Price, 15 shillings net. New York: Longmans, Green & Co., 1909.

Materia Medica and Therapeutics, Preventive Medicine, Climatology. Edited by George F. Butler, Ph.G., M.D., Henry B. Favill, A.B., M.D., Norman Bridge, A.M., M.D. Vol. VIII of The Practical Medicine Series. Under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Series 1909. Cloth. Pp. 338. Price, $1.50. Chicago: The Year-Book Publishers.

A System of Medicine. By Many Writers. Edited by Sir Clifford Allbutt, K.C.B., M.A., M.D., LL.D., D.Sc., F.R.C.P., F.R.S., F.L.S., F.S.A., Regius Professor of Physic in the University of
ry Davy Rolleston, M.A., M.D., F.R.C.P.,
eorge's Hospital. Vol. VI, Diseases of the
Cloth. Pp. 844, with illustrations. Price,
The Macmillan Co., 1909.

Diseases of the Nose, Throat and Ear, Medical and Surgical. By William Lincoln Ballenger, M.D., Professor of Otology, Rhinology and Laryngology, College of Physicians and Surgeons, Department of Medicine, University of Illinois. Second Edition. Cloth. Pp. 901, with illustrations. Price, $5.50 net. Philadelphia: Lea & Febiger, 1909.

Die innere und die chirurgische Behandlung des chronischen Magengeschwurs und ihre Erfolge. (Work Awarded the Alvarenga Prize by the
ft.) By Dr. L. Bamberger, Head Physician
torium. Paper. Pp. 269. Price, 8 marks.
1909.

I. The Presence of Tubercle Bacilli in the Circulating Blood in Clinical and Experimental Tuberculosis. By John F.
Viability of the Tubercle Bacillus. By
Lab. Bull. No. 57, September, 1909. Paper.
Government Printing Office, 1909.

Primer of Sanitation. A Simple Work on Disease Germs and How to Fight Them. By John W. Ritchie, Professor of Biology, College of William and Mary, Virginia. Cloth. Pp. 196, with illustrations. Price, 50 cents. Yonkers-on-Hudson, New York: World Book Co., 1909.

Introduction to Practical Chemistry. For Medical, Dental, and General Students. By A. M. Kellas, B.Sc., Ph.D., Lecturer on Chemistry at the Middlesex Hospital Medical School. Cloth. Pp. 249. Price, $1.35. New York: University Press, 1909.

Anatomy and Physiology of the Nervous System. By Sedgwick Mather, M.A., Professor of Neurology, The American College of Neuropathy. Cloth. Pp. 145, with illustrations. Price, $1.50 net. Philadelphia: John Joseph McVey, 1909.

Some Plans and Suggestions for Ho
Paper. Pp. 87, with illustrations. Publis
Association for the Study and Prevention of
Twenty-second Street, New York, 1909.

Problemi
Bartel, Privatdocent and
Universitäts-institut in
Vienna: Franz Deuticke, 1909.

Die Serodiagnose der Syphilis. By Dr. Carl Bruck, Privatdozent and Oberarzt of the Dermatologische Universitätsklinik in Breslau. Paper. Pp. 166. Price, 4.80 marks. Berlin: Julius Springer, 1909.

Air and Health. By Ronald Campbell Macfie, M.A., M.B.C.M., Author of "The Romance of Medicine," etc. Cloth. Pp. 328. Price, $2.50. New York: E. P. Dutton & Co., 1909.

Transactions of the Medical Association of the State of Alabama, Organized 1847, Meeting of 1909. Birmingham, April 20-23. Cloth. Pp. 714.

The Physician's Visiting List for 1910. Flexible Leather, with Pocket and Flap. Price, $1.00 net. Philadelphia: P. Blakiston's Son & Co.

The Decay of the Church of Rome. By Joseph McCabe. Cloth. Pp. 309. Price, $2.50. New York: E. P. Dutton & Co., 1909.

Cancer and Sarcoma. By H. D. Walker, M.D., Buffalo, N. Y. Paper. Pp. 59, with illustrations.

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Address

SOME OF THE RELATIONS OF OCCUPATIONS TO MEDICINE *

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On an occasion which, as I comprehend it, serves not only as your annual meeting, but also, to a considerable extent, as a means of formally introducing your body to the school of medicine recently inaugurated in this state, it is interesting to reflect that a generation ago conditions were such that the influence exerted on the profession at large by any individual medical school in this country was exercised chiefly through the clinicians connected with the school; while, at present, circumstances are so largely altered that a school like that situated here may have no dealings with the directly clinical side of medicine and yet, youthful as it is, be generally recognized as certain to have a large influence on medical progress, because of the character of the provision it makes for the teaching of the medical sciences. Indeed, the change has been so great that we now hear more frequently and more insistently than ever before the warning that has been uttered at times throughout several generations—among others, by such wise and charming writers as John Brown and Oliver Wendell Holmes—the warning, that is, that we are in danger of overdoing the scientific side of medical instruction at the expense of the clinical. I do not intend to discuss medical education here, or even that constantly recurring question as to the relative amount of time that may properly be assigned to the clinical branches and the medical sciences; but, since it bears closely on my purpose in discussing occupations in their relation to medicine, I would say that I do not feel the slightest sympathy with the frequently expressed fear that the tendency at present is to train up investigators, rather than clinicians, my reason being the very definite one that, to my mind, a sound clinician is essentially an investigator, whether he works in a laboratory with all possible facilities or in hard country practice; whether he conducts extensive studies of special questions or simply attempts to learn as precisely as possible what needs to be done for each separate patient. In the latter case, as much as in any other, he will be successful and useful in direct proportion to the degree to which he has been trained into the point of view and the methods of a careful investigator.

The most apparent defect in medical teaching, it appears to me, is not that students are taught too largely of the medical sciences: it is rather that they are not yet sufficiently trained in making their more scientific information a living and integral part of their clinical procedures, and still tend to place the two in their minds on each side of a wide chasm that is crossed only by means of bridges so frail and slippery that they are all too seldom used. This is not due solely to the methods employed by those who teach the medical sciences; it is equally and perhaps even more largely due to the tendency of those of us who are clinicians to allow both ourselves and our students, in considering clinical questions, to wander more widely into mere impressions and crude hypotheses than we should permit ourselves to do in dealing with matters that relate directly to the medical sciences. This attitude, so common among clinicians, is, I think, in large part due to our misfortune in having been brought up to the almost religious belief that the practice of medicine is an art, rather than a precise science, and an almost purely empirical art at that—a partial truth that, happily, is continually growing less true, but that has done much to obstruct progress, because we can so readily fall back on it, when we feel inclined to be easy-going, rather than precise.

In large part, also, the relative lack of precision in clinical work, a lack that is seen especially in therapeutic practice, is due, not to the impossibility of being exact, but to the fact that it is somewhat difficult to use precise methods in the circumstances of practice, which are so much less favorable to such methods than are the surroundings of the medical sciences. It is, however, largely because it so strikingly illustrates the fact that precise methods tinctured with some personal investigativeness are open to us all even in the most commonplace things in practice to a much larger extent than we customarily make use of them, that a study of occupations in their relation to medicine appears to me to be a matter of most especial interest as an example of the practical value of a training in the preliminary subjects in medicine such as that offered now by your own state school; for, in the consideration of occupations in their relation to disease, and in appreciating their effects properly, we need to make constant and lively use, not only of our knowledge of the medical sciences, but also of whatever knowledge we may possess of an infinite variety of technical subjects. Indeed, in the course of an ordinary practice any one can in this connection, by means of a little extra precision but with very little extra effort, both gain interesting diversion and varied knowledge by inquiring into this point, and at the same time elicit many facts that are extremely valuable in properly comprehending and in treating cases of all sorts; and these facts are often overlooked entirely by the ordinary routine method of recording the occupation of an individual. This point in the history affords, to my mind, more than does any other, an endlessly varied interest, both humane and scientific, on the one hand, and great practical help, on the other; and yet, in many an instance, very little attention is devoted to it.

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* Address in Medicine at the Annual Meeting of the Wisconsin State Medical Society, Madison, July 1, 1909.

INEXACTNESS IN CASE RECORDS

We often content ourselves with the mere names of occupations; indeed, we very frequently find in case-records names that not only mean absolutely nothing as to what the individual at hand does when at work, but that are mere general terms, covering a host of different occupations—terms, I mean, such as laborer, mechanic, machinist, mill operative, and the like, which are very common even in the best kept of hospital records, so common that Arlidge,[1] in his work on occupational diseases, stated that hospital records are so inexact on this point as to be practically worthless to one who is studying the effects of occupation on health. Though much information has meanwhile been accumulated, there has been no general change in this regard since Arlidge's book was written. While, therefore, we make a great point of putting down the name of a patient's occupation in his record, this is only too often merely a part of a general dull routine, and is frequently of no more value, so far as diagnosis and treatment are concerned, than the name of the patient himself. To be sure, if the patient says that he is a lead-worker, his whole trouble often becomes illuminated at once; if he is a drayman or works with heavy metals, we see immediately that he is subject to severe physical strain; if he is a sailor, we know that he is exposed to rough weather; if he is in finance, we know that he is likely to have severe nervous strain. There are, of course, a variety of such ways in which our common sense and our casually acquired knowledge make us see at once some of the main ways in which particular occupations may affect people; but it may fairly be said that we have too little system in dealing with this question, and that it is too generally the custom to pass over the occupation and go on into the other details of the history, unless there are some peculiar conditions in the case that suggest an unusual degree of relation to the individual's work or unless the mere name that the patient gives recalls at once some familiar consequences of such employment. This is more especially true of work in internal medicine. In some of the specialties there is a wider and often very alert appreciation of the importance of the occupation.

Indifference to this point is assuredly a very stepmotherly way of treating what is one of the chief factors in producing disease; probably, indeed, the most important of all, not only in interesting and unusual cases, but also in a large proportion of instances of the most every-day and commonplace types of disorders. There is a vast difference in the interest and profit attaching to a record of the occupation, if, on the one hand, one merely records the name of the trade, or, on the other hand, inquires routinely into the exact nature of the work in so far as concerns certain points that are likely to have an especially important bearing on the type of case under consideration. It would be folly to recommend that we elicit all the details of the work in all instances, or that we attempt to carry knowledge of the details of all occupations. Unless one should devote his entire time to acquiring information regarding the endless technical details of the almost innumerable occupations that we meet, it is impossible to conceive of carrying with us knowledge of even a small fraction of these sufficiently complete to make us see at once, when the name of a certain employment is mentioned, that this means a particular kind of physical or nervous strain, an especial exposure to dust or to some poisonous substance, or unusual tax in some other way. The impossibility of this is seen, for instance, in the conditions pertaining to lead-poisoning.

OCCUPATIONS PREDISPOSING TO PLUMBISM

Years ago Layet collected one hundred and eleven occupations in which there was more or less danger of lead-poisoning; and, through clinical experience and reading, I have been able to add a considerable number to this list. The uses to which this metal is put are so nearly endless that new sources of poisoning, previously unheard of, are still occasionally appearing. We cannot hope to remember such a mass of facts about one particular form of occupational poisoning, and we can still less attempt to remember the details and varied kinds of dangers associated with large numbers of occupations. We can, however, adopt some system of attempting to elicit the main elements of importance in relation to a particular case. This, I think, can be most readily done by, first of all, getting the patient to tell us briefly, but as clearly as he can, the main details of his work; and then attempting to follow particularly any suggestion that comes from this or from his type of disorder. In case I am not already familiar with the details of the occupation, I try to learn in different cases, as far as possible, what sorts of substances the patient works with, what position he works in, how heavy his work is, what his hours of work are, whether it is day or night work, the degree of exposure to heat, cold, or wet, and a few similar points; and, especially among well-to-do patients, but also with those of simpler life, I determine, of course, the degree of responsibility and general nerve strain.

I am aware that in mentioning such commonplace matters and insisting on their importance I lay myself open to the caustic criticism that James Mackenzie[2] applied long ago to Friedrich Hoffmann, when he said that there are certain persons who go about talking of well-known things as if they were themselves the discoverers of them. While I do not lay claim to be the discoverer of the importance of such things, I do have the temerity to repeat the statement that there is a vast difference between the results obtained in this way and those that one gets from accepting the mere brief statement of the name of the occupation as it is given in the ordinary history.

I may possibly make it clearer that I am not urging the use of methods that are employed by every one, if I give some illustrations. Some of you may not be familiar with the fact that carriage-painters are very much more subject to lead-poisoning than are house-painters. Stüler found in Vienna that they were from ten to twenty times as subject to lead-poisoning as were house-painters; and the average each year among carriage-painters was nearly three days' illness from lead-poisoning for each man employed. Of the painters whom I have seen in the last five years with lead-poisoning, about half were carriage-painters, while, of course, carriage-painters are only a small fraction of the whole number of painters. If we inquire into the details of their work it is perfectly clear why this should be the case, and we need not have been taught it beforehand to realize that it is likely to be true. Contrary to the well-known conditions under which house-painters work, carriage-painters apply a large number of coats of paint and varnish, polishing between each coat, and thereby enveloping themselves in dust which contains much lead. They also work largely in an enclosed atmosphere, to prevent dust and dirt from being blown on the surface, which must remain smooth. Clearly their opportunities for lead-poisoning are very great, as are their opportunities for acquiring respiratory diseases, tuberculosis and the like, to which they are very subject.

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[1] The Hygiene, Diseases and Mortality of Occupations, London. 1892.

[2] A History of Health and the Art of Preserving It. An Account of All that has been Recommended by Physicians and Philosophers toward the Preservation of Health from the Most Remote Antiquity to the Present Time, Edinburgh, 1758.

Again, we know well that workers in wood are subject to the moderately bad mechanical effects of ordinary sawdust. When we inquire more precisely into this, however, we find that a certain number of workers, most strikingly those engaged in working with boxwood, teak, and sequoia woods, are subject also to the general poisonous effects of alkaloids or other substances contained in these woods, which may have interesting and rather serious general effects, chiefly on the circulation and, still more frequently, a marked local effect on the mucous membranes and the skin—a matter that is of some importance in this country and that has been discussed in an interesting way in relation to conditions in England by Oliver.[3]

SCIATICA IN LOCOMOTIVE ENGINEERS

I know of no better additional example of the necessity of obtaining data regarding the occupation of patients than that mentioned to me by Dr. Latta, head of the Pennsylvania Railroad Relief Service. It was found that an especially large number of cases of right-sided sciatica were being reported in locomotive engineers, and it seemed quite clear that this was due to something peculiar in their work. An exact inquiry into the conditions under which these men worked, so far as they bore on the point, almost at once laid emphasis on the fact that every one had known before, but had given no attention to, namely, that the engineman had customarily sat sidewise on the bench of the right-hand side of the engine-cab, and, in the constant jolting, the weight of his body was continually thrown violently on the right thigh and buttock. The simple expedient of cutting off the forward part of the bench, so that the engineman had to sit squarely facing forward, sufficed to reduce the number of cases of sciatica to the normal and to eliminate any especial prevalence of right-sided cases.

DISORDERS DUE TO HEAT

I have recently had a somewhat analogous experience in connection with the disorder that I have described as occurring in consequence of exposure to severe degrees of heat. I saw some years ago two peculiar cases of acute and violent muscle-spasm that had no analogues in medical literature; and, on more exact inquiry, I learned that both were in men exposed to unusual degrees of heat. Inquiry among other men who were severely exposed to very high temperatures in their work showed that nearly all men in such occupations are familiar with such attacks and that a large proportion of them have had attacks themselves. Through subsequently watching for such cases I have seen a number more, all exhibiting the same cause. I find through physicians whose work brings them into frequent touch with persons in such occupations, through the men themselves, and through their employers, that this, which is clearly a well-defined disorder, though not recognized in general medical literature, is astonishingly common in certain occupations; is of a good deal of importance from the economic standpoint, in its effects on the men and on the productiveness of the occupations in which they are employed; and seems to be always due to the same cause.

I have become convinced, also, that there are other important effects of heat that have not been generally recognized in medical literature, because attention has been too exclusively fixed on so-called heat-stroke and heat-prostration as consequences of exposure to high temperatures. More thorough study of conditions in cases that I have seen myself has shown instances of nervous lesions, such as focal meningitis, that were almost undoubtedly due to local or general exposure to intense heat, and I have seen likewise more or less serious effects on other organs. The literature of occupational disorders also contains numerous more or less well-substantiated statements as to the effects of heat in various ways, particularly on the nervous system.

More than seventy-five years ago Thackrah[4] said that MacTurk had described to him the frequency of various head-symptoms in workers in heavy metals—due, he thought, to heat; and Layet, a generation ago, described similar conditions. The statistics of some of the foreign sick-benefit societies and the writings of various authors indicate that several nervous conditions, meningitis, epilepsy, insanity and even suicide, are relatively common in some of these occupations. More or less serious circulatory weakness, anemia, acute and chronic disturbances of digestion, acute and chronic nephritis, respiratory disease and skin-lesions also appear to be unduly frequent in such persons. In addition to this, there has been much discussion regarding the incidence of cataract, retinal and choroidal changes, and chronic conjunctival lesions in glass-blowers; and similar conditions clearly occur also, though less well recognized, in iron-puddlers and other persons whose eyes are exposed to very intense heat. Dr. de Schweinitz states that he could often tell whether men working at puddling-furnaces were right-handed or left-handed by studying the effects of their work on their eye-grounds; and Röpke[5] states that Quint described to him cases of right-sided cataract in right-handed iron-workers and left-sided cataract in those who were left-handed.

The instances that I have mentioned are, of course, exceptionally striking, and a study of them has been unusually productive of results. I venture to state, however, that there are few, even of the commonplace occupations, in which more careful inquiry into the details of the work will not be repaid by a much broader understanding of some of the ills that people engaged in these occupations complain of—even though one may not often elicit points that are worthy of separate record in medical literature. For instance, it is known that those who work with heated tallow and other animal grease are subject to gastrointestinal disturbance, apparently from the volatile fatty acids that are given off and that the workers ingest and inhale. Recently I saw a man whose chronic gastroenteritis was almost certainly due to his work as a bullet-dipper, in which he was constantly exposed to the fumes of hot grease.

LOCAL EFFECT OF STRAIN

One of the first cases that aroused my special interest in the effects of occupation was an instance of that extremely common and endlessly varied subject, the local effects of strain; and it was, at the same time, an instance of the necessity for understanding quite precisely what the individual does. This man had signs suggesting contraction at the base of the left chest. He had had pleurisy, but on the right side. I was puzzled to explain his physical signs, but the man finally gave the whole explanation himself. He had been put down in the history simply as a machinist. He elaborated on this by saying that he was a "bit-and-auger fitter-up"; and further inquiry showed that he had spent most of his working hours for twenty years with his left arm advanced holding the piece of steel that he was fitting, and turning it forcibly every few moments in such a way that each time he did this he twisted the lower part of his left thorax inward.

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[3] Diseases of Occupation, 1908.

[4] Effects of Arts, Trades, and Civil States and Habits of Living on Health and Longevity, Second Edition, 1832.

[5] Weyl's Handbuch der Arbeiterkrankheiten, 1908.

SOME OCCUPATIONAL CAUSES OF HEART STRAIN

These effects of strain, both the general effects and especially those that are exerted on particular organs, are daily experiences and frequently most interesting and illuminating; and the fact that they are every-day things, of course, makes them of greater interest. They are of particular frequency and importance in connection with circulatory disorders. Not long since I saw in quick succession a man with mitral insufficiency that appeared to be well compensated but that gave him much distress at his work; another man with aortic insufficiency that was giving him terrible distress when he was admitted to the ward but improved with surprising rapidity; and a third who had very dangerous myocardial failure with dilatation. The last-mentioned man had undoubtedly damaged his heart by alcoholism some years before, but neither with him nor with the others was there apparent any sufficient immediate reason for the development of symptoms. In none of them did the occupation as given in the record seem a sufficient cause for their symptoms. The first man was recorded as a carpenter; the second as a paper-cutter (starting and stopping a cutting machine); the third had a newspaper stand. Inquiry showed, however, that the first was a specialist in his trade in that he worked for large builders and that his duties consisted almost entirely in putting up heavy parts, and he had to lift every few minutes and put into place pieces weighing from one hundred to one hundred and twenty pounds. The second man proved to have as the chief part of his duties not simply cutting paper, but lifting and placing in the machine every few moments bundles of paper weighing from fifty to one hundred pounds; while the third man himself delivered newspapers to his clientele and this meant that in order to do his work quickly and hold his trade he set off twice daily with a package weighing fifty pounds or more (about one hundred pounds with Sunday editions), and went a circuit of two or three miles as nearly on the run as possible.

I would repeat that I am well aware that in dwelling on such simple things as important I am liable to the same comment that one of my friends applied recently to a distinguished man: "He learns out loud simple things that other persons know already." I mention them deliberately, however, for the very reason that they are the simple things that we meet with daily. Such things could be mutiplied *ad infinitum;* but I would especially note their importance in connection with chronic diseases of the joints, in a large proportion of which, more particularly in non-infectious cases, strain plays a most important part, especially in some of the apparently obscure cases of spondylitis and, of course, in flat-foot and knock-knees. Indeed, the latter are so common in some occupations that the laity, especially the Germans, have applied special terms to the disorders or infirmities produced.—*Bäckerbeine, Kellnerbeine.*

MERCURY POISONING

Finally, before leaving this part of the subject, let me give an instance of the fact that little points in the abstract information that we have acquired in some of our earlier studies not infrequently come into play in a very lively and human way in connection with occupations. The fact that mercury is volatile at ordinary room-temperature does not appear to be of much practical value in medicine until we see the exceedingly interesting results of its volatility in those who work with mercury; and recently this came even more closely home to me when I found a friend, who is much engaged in working with physical apparatus, exhibiting the remarkable erethism and apprehensiveness so common in chronic mercury poisoning, together with apparently causeless but persistent diarrhea. As an example of his nervous state, I would say that he told me that he left letters unopened for days for fear that they might contain some news that would distress him. He had an open jar containing mercury constantly on his office-desk, and had frequently spilled quicksilver on the floor of his office and of his bedroom, without paying any attention to it. About two-thirds of the twenty-four hours were spent in these two rooms. After he had had his attention called to this and had had the floors and cracks very thoroughly cleaned, puttied, and painted, and kept his mercury-receptacle tightly closed, his diarrhea and neurotic symptoms disappeared. They have since remained absent, now more than a year.

An undescribed, but perfectly rational cause of occupational mercury poisoning, which depends on the well-known fact that mercury is absorbed through the skin, is to be found in the custom that many dentists have of working up their amalgam in the palms of their hands. I have notes of two dentists who acquired poisoning in this way. I did not see either of these cases myself, but both are well authenticated by physicians.

Instead of being a frequently dull and profitless part of history-taking, occupations of even the most ordinary kind, when looked at in this way, become a constant source of useful information and of very interesting diversion. When viewed in this manner one appreciates also the second point that I would make, that is, that we may profitably look on the conditions in occupations as providing numerous massive experiments from which one can gain many broadening conceptions, and, furthermore, from a study of trades new facts that influence general medical conceptions may occasionally be gained ready-made, especially if the suggestions that they give are made more secure through animal experimentation and the precise studies that the latter permits of. In this way we can get answers to many questions that, approached by any other means, are much more difficult and at times impossible to elucidate, and that, in certain instances, have very important influence on our conceptions of some forms of disease and our methods of treating them.

It has been chiefly from study of occupations that we have learned the important effects of local and general strain in producing their very striking results on the circulation and other general functions or on especial local tissues. Occupations have also, of course, furnished practically all our knowledge of the effects of dust of various kinds, and our conception of the importance of commonplace things in producing disease must certainly be made much more emphatic by considering the dreadful evidence of the influence of very dusty occupations on health, evidence such as that found in the statistics of Sommerfeld,[6] Calwer,[7] and others regarding the duration of life of workers in stone, which appears to average only about thirty-three years. That is, as Calwer remarks, "a boy of fourteen taking up this occupation has a prospect of only about nineteen years more of life." Calwer puts the mortality of stone-cutters at over 5 per cent.; while the average among all persons studied was only a little over 1 per cent. Other figures showing the possible results of dust-inhalation in an astounding way are those of C. I. Birmingham[8] regarding the ganister-grinders in England, whose annual mortality reaches as high as 179.8 per thousand. Fortunately, this mortal industry employs but few men. Oliver has also given a most interesting description of the curious effects of gold-mining on the Rand in South Africa, an occupation that has had results only less deadly than ganister-grinding.

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[6] Die Berufskrankheiten der Steinmetzen, etc., Berlin, 1892.

[7] Die Berufsgefahren der Steinarbeiter. Denkschrift an dem Bundesrat, 1901.

There are some exceedingly striking differences in the effects of different forms of mineral-dust. In a plant with which I am very familiar, the men stay for hours each day in an atmosphere so charged with dust from crushed ore that one can see only a few feet away; and yet, in over a decade, no marked bad results have appeared as a consequence. The difference is attributed by an able engineer who is familiar with the last-mentioned place, and who was also on the commission that investigated the miners' disease on the Rand, to differences in the physical characters and the solubility of the two forms of dust. It is doubtful whether there is not some other more peculiar explanation, however, for Oliver especially notes that certain of the miners in India, although they work with the same character of rock, escape the effects that are seen on the Rand.

LOCAL EFFECTS OF POISONS

It is also largely through our knowledge of occupations that we have learned of the curious way in which many poisons exert their effects on particular tissues, a point that is seen so strikingly in the fact that lead, in a large proportion of cases, picks out not only the nerves of the upper extremity, but a particular nerve in the forearm, in adults; while in children it more commonly attacks the nerves of the lower extremities. Arsenic, on the other hand, usually attacks most severely the nerves of the lower extremities; and while arsenic violently affects sensory nerves, lead scarcely does so at all. Methyl alcohol, in strange contrast to both these, shows a striking affinity for the optic nerve alone, a peculiarity that, curiously, is to a large extent shared by the newer organic preparations of arsenic, atoxyl and arsacetin. Facts like these have largely influenced our conceptions of toxemias, and help to point the way toward future precision in understanding and controlling toxemias.

There are a variety of other ways, also, in which important general conceptions have already been gained from occupations. A number of points of this kind that appear to me to be of great interest I have not seen emphasized. For instance, does it not greatly help to define our views of hysteria and neurasthenia (or of the condition that is now fashionably termed psychasthenia) to know that every conceivable symptom of these states occurs either in carbon bisulphid poisoning or in chronic mercury poisoning and that hysterical laughter and tears are common in chronic manganese poisoning. The symptoms usually disappear as the poisoning is relieved, and are, therefore, a direct effect of the poisoning. In chronic mercury poisoning there is in most cases absolutely no evidence of any organic disease that can be focalized, and the same is often true of carbon bisulphid poisoning. In the latter, however, there may be all forms of combinations of apparently functional disorder with the signs of organic disease, from the slightest to the most severe, and at times there remain permanent evidences of spinal lesion or persistent psychoses.

Such conditions properly make one suspect even more strongly than before that such states are *usually* due, not to mere psychic factors, but to some toxemias, and probably often to some special form of toxemia—when we consider that these neurotic symptoms are so frequent in certain known forms of poisoning and so closely dependent on them, while in other forms of poisoning they are actually uncommon. Surely the frequent toxic origin of such states is made very probable by Köster's experiments, in which he produced in rabbits, by exposing them to carbon bisulphid, glove-like areas of anesthesia; or, in other words, a characteristic hysterical stigma. This makes one feel even more strongly inclined to check the unbridled advance of pure psychotherapy in this country, especially when it is employed by non-medical persons.

On the other hand, we have likewise striking evidence that such neurotic states may at times follow on purely nervous and chiefly psychic influences—evidence provided by the studies of telephone-operators, for example, whose work is so full of strain that Wernicke[9] stated that every one of them who continues at work for several years becomes hysterical. This is probably an extreme view, but nevertheless Schuster,[10] Tommasi, and others, who also have studied this question, agree that hysteria and neurasthenia are most unduly common among these persons.

INFLUENCE OF OCCUPATION ON POSTERITY

In the half-medical and half-economic question of the influence of occupations on future generations, there are scarcely any more impressive points than those found in the fact that the mortality among the infants of mercury-workers is much higher than even the distressingly high figures given by the French and many other foundling asylums; and Constantin Paul's and Lewin's[11] studies of mothers who were engaged in working with lead and its salts showed even more dreadful effects on their progeny. Among a group of the latter women that Paul studied there occurred 123 pregnancies, of which 64 terminated in miscarriage, 5 in still-born children and 4 infants died after premature birth, while of the infants that lived longer, 20 died in the first year of life, 8 in the second year, 7 in the third, 1 later, and only 14 were living at the time of the report. Such effects are, I am sure, due in part to direct placental poisoning of the fetus or at times to poisoning through the mother's milk after birth, for lead has repeatedly been found in the fetuses of these women, in the bodies of their infants that died soon after birth, and in the milk of the lead-poisoned mothers. It is however largely due also to the effects on the child produced by the general degradation of health that this poisoning causes. This fact and the much broader fact that the parent has a profound physical responsibility toward the child are wonderfully illuminated by the observation that seven women who were the wives of men working in lead, but who were themselves free from lead-poisoning, had in the course of 32 pregnancies 11 miscarriages and 1 still-birth, while 8 children died in the first year, 4 in the second year, 5 in the third, 1 later, and only 2 lived. In these instances there was essentially no possibility of lead-poisoning in the fetuses and infants, and the dreadful effects must have been due to the disturbed health of the father. There are possibilities suggested by this of valuable studies on heredity, and it clearly shows that we tend nowadays to swing too much to the side of environment in explaining disease. Such studies show also that we probably think too quickly of lues when we get a history of habitual abortion.

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[8] Quoted by Oliver, loc. cit.

[9] Monatschr. f. Psychiat. u. Neurol. Ergänzungsheft, xvii.

[10] Weyl's Handbuch der Arbeiterkrankheiten, 1908.

[11] Berl. klin. Wchnschr., 1904, p. 1074.

These latter points that I have mentioned as being illuminated by a study of occupations are semi-medical and semi-philosophical. There are many more of the same kind that are of very great interest, such as the direct influence of various occupations on the occurrence of alcoholism, sexual immorality, and other forms of depravity; the effect of employment on home conditions; the influence of the latter secondarily in producing depraved nutrition and its consequences, especially tuberculosis; and many other such questions. Besides these, however, there are numerous points that are open to investigation by the more precise methods of the laboratory, and particularly by animal experimentation; and in some instances such studies are perhaps capable of settling or greatly clarifying important questions.

Opportunities for valuable study of this sort have repeatedly gone begging until the matter was cleared up in other ways. For instance, there is no more important practical fact in controlling infectious diseases than that which has been borne in on us in overwhelming fashion by the studies of recent years—the commanding influence in the propagation of these diseases of more or less direct contact with the sick. Filth, important as it is in providing conditions favorable for the spread of infections, has taken a place of secondary importance in managing them, for contact can never be controlled, but only lessened, through controlling filth. The conviction that this was likely to be true and the stimulus to undertake the work that would prove it might have been gained much earlier than it was had thoughtful attention been given to studies such as those of Augustus Gay[12] on "nightmen" scavengers and dustmen, which showed that, while these men spent their lives chiefly in dealing with filth, they exhibited an unusually good average health; and the limits of the relation of dust and dirt to disease are made much clearer by the fact that Oliver[13] reached similar conclusions from his studies of the "dust-women" of London, whose occupation consists in rescuing petty trifles from dry refuse and sweepings. Our general position at the present day in regard to this whole matter of infections was long ago stated tersely and clearly in Gay's conclusion that "filth is rather the *nurse* than the *parent* of fever." Earlier appreciation of this would inevitably have led to earlier appreciation of the actual importance of contact.

Again, it is not improbable that at least one, and perhaps more, of the valuable observations of the Pawlow school and of those who have followed Pawlow might have been brought out years before they were had thoughtful attention been given to a very old method of preventing lead-poisoning, which probably has some virtue. More than one hundred and twenty years ago Richardson[14] said: "In order to defend themselves from the bad effects of lead, all those that are in any manner exposed to its daily influence should eat some fat broth. or bread spread thickly with butter or lard, before they enter on their work." He also recommended salad-oil, likewise to be taken fasting. The latter measure is, I know, still used in some lead-works, and in some of them it is required of the men, with, it is claimed, good results. Not improbably it does good; at any rate had the suggestion that this point gives been followed up it might have been shown long ago, instead of only in recent years, that fats depress the secretion of gastric juice and have important dietetic use because of this fact, and it might likewise have been found as a corollary to this, long before Oliver, Bedson and Best actually pointed it out, that the hydrochloric acid of the gastric juice is the chief factor in getting the insoluble lead salts into solution, and thereby causing their absorption. It is an interesting fact, also, though not a very relevant one, that other observations than those mentioned indicate that the gastric hydrochloric acid is a dominant factor in leading to lead-poisoning. Carnivorous animals are much more subject to lead-poisoning than are herbivorous when living about lead-works, very probably because the former have a much higher percentage of hydrochloric acid than the latter.

RELATION OF OCCUPATION TO MALIGNANCY

There would appear to be an opportunity, also, to advance our knowledge of cancer in ways that might be very useful through studying occupations more accurately. There is sufficient evidence that chimney-sweeps and workers in tar pitch and paraffin get cancer from the substances with which they come in contact in their occupations to make it desirable to attempt more earnestly than has yet been done to determine what the nature of the peccant substances is—whether chemical or possibly micro-organismal—and the character of the cell proliferation that they produce in the earlier stages. There have been a series of studies of this matter, but not convincing ones. It appears to me to be not a question merely of chronic irritation of the skin in any of these conditions; for in a considerable variety of occupations severe skin irritation is common, as in bakers, and in a number of them (chrome-working especially) violent non-malignant skin lesions occur frequently, but in only a very few occupations do progressive proliferative changes in the skin appear to be set up. A similar tendency to cancer of the skin prevails among gardeners and agriculturalists, who have a very abnormally high incidence of this disease. There is evidence that this is not true of these occupations in certain regions, as in Erfurt (Loth: Weyl's Handbuch), but this may indicate the interesting possibility that the exciting cause is limited to certain localities.

Such are some of the suggestions regarding investigations of general significance that are to be obtained from a knowledge of occupational conditions. There are many other suggestions of interesting studies that relate to especial disorders themselves, rather than to general medical questions. An important instance of this is carbon monoxid poisoning. This is, in the first place, probably the most important form of suicidal poisoning at present; it is a somewhat frequent form of accidental poisoning from broken gas-mains or house-pipes, Dr. R. S. McCombs having seen over 500 such cases, he tells me, in a few years in his work with a large gas company. It is also an occasional cause of more or less serious danger to families from poor drafts in heating apparatuses. Beyond this, however, it is a somewhat common form of intoxication in men working in iron and other mills and furnaces, in miners, in those working in deep excavations, in those employed in the commercial use of electric furnaces (which are becoming of considerable

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13. Oliver: Dangerous Trades, etc., 1902.

14. Chemical Principles of the Metallic Arts, with an Account of the Principal Diseases, etc., Birmingham, 1790.

industrial importance), and even in laboratories in which the electric furnace is used in investigations. The poisoning occurs, furthermore, in men in fire companies and a variety of other occupations, the most recent source of it being the exhaust of automobiles—chauffeurs and car owners whom I know having repeatedly been mildly overcome when running the engine of a motor-car in a small, closed garage for some time and serious cases having been reported in noteworthy number. It has even caused somewhat serious accidental poisoning of the occupants of a closed automobile in which there was a defect in the floor above the exhaust (Oliver). For a subject that has so much clinical interest, especially to those engaged in hospital practice, and one that relates to such a variety of occupations, the literature is in a curiously unsatisfactory state and is much in need of a systematic overhauling and improvement as regards sources of the poisoning and many points in the clinical history and treatment, and a determination of the importance or lack of importance and the clinical characteristics of chronic poisoning of this sort, from both accidental and occupational sources, is especially desirable.

There is no dearth of subjects to work on, and the problems vary from those that are very simple to those that are so complex that one can scarcely hope to add more than slight fragments of knowledge. We do not need to search for a subject to work on so much as we need to avoid the superficial methods of reaching conclusions that have been so common in this class of studies. Thackrah very properly said of Ramazzini,[15] who was the earliest writer on this subject, that he had too strong a disposition simply to investigate the conditions surrounding an occupation in a general way, to decide that certain results must occur, and then to describe these results as occurring—a tendency that Thackrah modestly says he has often detected in himself. It is a tendency that may be seen widespread in medical literature, and it has caused many erroneous statements to become traditional.

EMPHYSEMA IN GLASS-BLOWERS

For instance, the teaching that glass-blowers and those who play on wind instruments are very subject to emphysema is quite general; but the most recent studies of the musicians in the German military bands, and the studies by Prettin and Leibkind[16] of glass-blowers who had been at this occupation for at least ten years, are directly opposed to this. The latter showed that only five of 230 glass-blowers had emphysema, and it was probable that in all these cases it was due to other causes than the glass-blowing. These observations are concurred in by Schmidt and others. This, then, is apparently a tradition and not a fact. It is also possibly an illustration of the adaptability that tissues frequently exhibit to an extra tax, so long as they are not diseased, though it appears to me that careful observation of these persons shows that the strain comes very much more on the mouth cavity than on the lungs, and the mouth often showed marked results—hernia of cheeks and perhaps dilatation of Steno's duct.

INDUSTRIAL HYGIENE IN THE UNITED STATES

Just as a more precise study of individuals in relation to their occupation leads one to some actual investigation of occupations from a medical standpoint, so does it almost necessarily lead one to the third point of my remarks, namely, the taking of a sociologic as well as a medical interest in the matter. In conclusion, let me emphasize some reasons for more thorough studies of the hygiene of occupations in this country, in order that special provision may be made for the circumstances that exist here. When one considers all the attention that hygienists in nearly every other highly civilized country have given to the study and control of the ill effects of occupations, and when one merely reads over some of the many regulations that have been established abroad to improve conditions, it lowers one's pride to realize that in America the national government has made no noteworthy original studies of the question, and the only government contribution of importance is the recent report from the President's Homes Commission, written by Dr. Kober, in which, however, he was obliged to get his facts not from government investigations, but wholly from other sources. Of the states, Massachusetts is the only one that has conducted an investigation that deserves any special attention, and this was naturally limited in its scope. As to regulations, these are exceedingly few in number and inefficient, except as regards a few striking points such as the regulation, in a limited way, of the hours of work, the danger of accidents, etc. Indeed, in regard to most occupations as they exist in this country, we have no systematic information from either government sources or individuals that would be sufficient to base just and comprehensive laws on. In considering occupations from a legal standpoint, as in using this question in our medical practice, we are in almost all instances dependent chiefly on information that comes from European writings, and conditions are known to be in some instances very different in this country, and they are probably different in numerous instances.

A concrete illustration of this latter point is seen in connection with phosphorus-poisoning. This furnishes, also, a striking illustration of the fact that industries in this country are very frequently controlled by great corporations, while abroad they are still often found to a large extent in the form of small domestic industries. Matchmaking is, in Germany, still largely carried on in little home factories, and when the recent law making it illegal to use the poisonous white or yellow phosphorus was passed it was felt necessary to make this prohibition apply to the home industries, because many of the worst cases of poisoning came from these sources. It was, however, considered necessary at the same time to avoid killing off the little home factories, because of the numbers of people that were engaged in them. Hence a clause was introduced which exempted these little factories from the provisions of the patent on the methods of making safety matches. So different are the conditions in this country that at the present time almost the whole match-making industry is confined to one large corporation, and this concern has so thoroughly recognized the valuable effects of hygiene from both the humane and the economic standpoint and has established such effectual measures that phosphorus-necrosis has almost disappeared in their factories even in those who work with the poisonous forms of phosphorus, a result that at one time was considered impossible to achieve. The concentration of capital that is so remarkable a feature of the industries of this country has, therefore, in this, as well as in some other ways, made our conditions greatly superior to those in most other countries. In many instances, however, it makes them worse, for, if a corporation be rapacious, the larger it is the worse its evil effects. That the conditions are wonderfully good in individual corporations but astonishingly bad in others, and, further, that there is a sad lack of power to make them good when they are bad, is shown better perhaps than it could be shown by any native studies, through the dispassionate report of a foreigner, Dr. Gallard,[17] who was sent here by the French government to determine what the conditions are in this country as regards industrial hygiene. He speaks with enthusiastic admiration of the remarkable things that certain large concerns have done for their employees; but, on the other hand, he discusses with courteous but severe condemnation some other conditions, and he refers with considerable amazement to the *laissez-faire* attitude of the government and the general public. Especial condemnation is visited on one concern that makes a valuable safety device, but does not use it in the factory where it is made, although it is specially needed there!

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[15] De Morbis Artificium Diatriba, 1703.
[16] München med. Wchnschr., 1904.

There are various other things than those mentioned that make conditions in this country very different from those abroad. Indeed, there are certain occupations that are more or less important as causes of ill health abroad that practically do not exist here, at least in a form to cause the same sort of disease. There are, on the contrary, others that are of importance in this country, but are scarcely touched on in foreign writings.

The much greater use of machinery here than abroad, in replacing hand labor, is an element of much importance. I visited, for instance, a certain paint factory, in investigating some phases of occupational lead-poisoning, and found that only one man was at all seriously exposed to lead. Machinery, indeed, did so much of the work that fewer men were employed in the large factory than at the desks in the offices. In some instances, as in this, the effects of such modern machinery are extremely good. In others they are bad, because they throw an exceptional amount of physical or nervous strain on a few individuals, as, for example, in running some of the more complex textile machines, and any good physical effects of such improvements that may occur are, in this country, too often purely incidental to the commercial value of the changes in technic. The deliberate introduction of such measures because of their hygienic effects has been much more extensively practiced abroad than here. There is in Europe a very much more general requirement of efficient means of ventilating and cleaning working-places and of other important general measures; and also of many special ways of overcoming the particular evils of particular occupations. Power is very frequently given by law to see that these measures are carried out. Furthermore, the frequency with which they offer in several foreign countries such philanthropic measures as providing means for working mothers to nurse suckling infants is admirable, as is the frequency with which they demand less taxing work or entire rest for women in the latter part of pregnancy and in the puerperium.

When contrasted with foreign conditions, our nation seems in many ways to be generations behind numerous other civilized countries. I would have it understood, however, that I do not advocate as the dominant means of overcoming the evils that exist the enactment of special laws. Laws are essential, in order to control those who have neither altruism nor breadth of view; and that they may do great good is seen in the fact that in France they have long had careful regulations governing the manufacture of lead products, with the result that in Paris, one of the two chief centers of the lead industry in that country, the cases of industrial lead-poisoning admitted to hospitals a few years ago averaged only 13 per annum (Gautier), while in Klagenfurt, Austria, also a center of these industries, but in a country where they are essentially uncontrolled, the number of attacks of lead-poisoning in one factory averaged nearly 1½ per annum for each man employed. The justification for laws because of the loss that occurs to the state is seen in the fact that in the one city of Vienna, among the pottery-makers, painters, printers and typesetters, about 45,000 persons in all, and engaged in occupations that by no means head the list in the danger of poisoning that they entail, the annual loss of labor through lead-poisoning alone was over 43,000 working days.[18] In this country this would probably mean at least $100,000 of direct annual loss, besides the confusion and inefficiency lent to the work by constant changes of employees. When one considers that tuberculosis and other diseases that are secondary consequences of the poisoning that occurs in such occupations produce an even greater loss of labor and expense to the state, the economic effects of the evil conditions of occupation and the desirability from the standpoint of the commonwealth and nation that they be lessened become quite apparent.

As a very striking illustration of the influence of laws, I would mention that the English pottery workers showed per annum but 1.5 per cent. of lead poisoning, while the Viennese engaged in the same sort of work showed 34.1 per cent.—a difference that appears to be almost entirely due to the fact that there are no laws controlling this industry in Vienna, while the English laws, particularly in regard to the fritting of the glaze, are strict. Again, Gautier, as I stated, mentions that in Paris, one of the two main centers of the white-lead industry in France, the total number of cases per year of industrial lead-poisoning admitted to hospitals during two years was only 13, owing to their very careful regulation of these industries, while we have had in one hospital in Philadelphia, the Episcopal Hospital, each year many more than this number of cases from one such factory.

APATHY OF THE WORKER

But regulation is not the first, nor is it the only important step. This is especially true for this reason, if for no other: Laws or voluntary altruism may lead employers to make regulations and to provide special hygienic facilities, but the greatest difficulty in many instances is in getting the working people to take precautions intelligently. Even when any time consumed was paid for as if it were labor, I have known employees to object obstinately to regulations demanding bathing, for example; and those who have devoted much time to the study of occupational conditions frequently bewail such difficulties. Employees think the precautionary measures are too much trouble or require too much thought, or they often feel that any regulations interfere with the rights of a free American citizen, or they have other reasons. Very often they object simply because the regulations are new and are against their traditions. This attitude and the selfishness and apathy of some employers can best be overcome by finding out what the exact details of the process are, so far as they affect health, and then pointing out to both employers and employees how these difficulties can be overcome. Employers are very quick to see the economic value of hygienic measures if they can be convinced that they actually accomplish results, and especially if it is clear that they are in themselves ultimately accompanied by reduced expense. Suitable laws will come much more quickly and more certainly when there has been accumulated general knowledge of the conditions that actually exist in this country and of the things that are needed in correcting them. This must originate in very large part from physicians, for they alone have frequent occasion to see clearly what the effects are. It is because, with very little effort or expenditure of time, almost every one of us can not only increase the precision of his own clinical methods, but can also contribute to a growth of knowledge that will tend enormously to benefit human kind that it seemed suitable to digress, in this latter portion of my remarks, into matters that are quite as much sociologic as medical.

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[17] L'hygiène de l'œuvrier aux Etats-Unis, etc., Paris, 1905.

[18] Kaup: Gesundheitsgefährliche Industrien, etc., 1903, ed. by Bauer.

Original Articles

THE RESPONSIBILITY OF THE PHYSICIAN IN THE CAMPAIGN AGAINST TUBERCULOSIS[*]

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The subject of tuberculosis has been considered from a great many points of view, but I do not think that the responsibility of the family physician has been sufficiently emphasized. The object of this paper is to bring existing conditions to the attention of this society and to make an appeal for the more faithful recognition of our very great responsibility in the campaign against tuberculosis.

The apathy, indifference, and often hostility, displayed by so many physicians is one of the greatest obstacles to the successful prosecution of the fight against the greatest enemy of the human race.

The public has a right to expect of us that we, individually and collectively, do everything possible to protect it; people are looking to us to devise means to protect them in the home and the workshop; they expect us to instruct them, in our capacity of family physicians, in the means to be employed in its prevention.

The active work of the campaign has been conducted by a few earnest and sincere men, but it has not met the interest and thorough cooperation of the great majority of general practitioners. Unless the profession as a unit support this movement its consummation will be very materially delayed.

We have often failed to recognize the social aspects of the disease. We have not insisted on our patients giving up their work, in the early stages of the disease, before they become incapacitated; we have not pointed out the sound business principle of this course.

We have sent our patients to Colorado and California and other health resorts, without sufficient inquiry into their financial ability to meet the increased expenses in those places; we have encouraged the hope, which few of them realize, that they may find gainful occupation there; the cry has come to us from those places to keep our patients at home, and we must heed it.

Have we realized the possibilities of home treatment? I think not. The essentials of treatment—fresh air, good food and rest—are by no means universally prescribed, but they should be, just as much as quinin in malaria or mercury in syphilis, for they approach nearer to a specific than anything in the Pharmacopeia. It is wonderful what results they will produce in the home of the patient, many times under very unfavorable conditions. We do not allow a typhoid patient to get up until his temperature is normal; then why a tuberculous patient? No objection on the part of the relatives or friends should deter us from insisting on these essentials of treatment.

The responsibility of the physician embraces his obligation to his patient, to society and to the state.

RESPONSIBILITY TO THE PATIENT

As the family physician is generally the first to be consulted, he has the opportunity first presented to him for early diagnosis, and as the subsequent career of his patient, both of health and fortune, depends on the early recognition of the disease, he has a very great responsibility.

A few very important helps to diagnosis are:

1. Careful attention to early symptoms.
2. Thorough physical examination.
3. Examination of sputum.
4. Tuberculin tests.

1. *Careful Attention to Early Symptoms.*—Among these may be mentioned cough, afternoon fever and loss of weight.

Cough is generally the symptom that prompts the patient to seek advice. It may not be constant, but may occur only in the early morning, on rising, or at night. When it occurs in a person previously healthy it should be looked on with suspicion. This symptom should be more seriously considered than it habitually is by a great many men, especially when accompanied by a slight elevation of temperature.

Afternoon fever will not be detected in the early stage, unless it is looked for; therefore the necessity for the use of the clinical thermometer. This simple procedure is frequently neglected. If a slight elevation of temperature is found or suspected it is the proper thing to give the patient a thermometer, with instructions in its use, and have him take his temperature every four hours during the day and keep a record. The great majority of patients will be thoroughly capable and willing to do so, and it will be a great help to diagnosis.

Loss of weight is a very important symptom. The patient should be weighed by the physician himself, so that it is important that the latter have scales in his office. This symptom, associated with cough and afternoon fever, will add another very important link in the evidence.

There are many other important symptoms, which I have not time to consider in detail, such as spitting blood, malaise, fatigue after the usual work, loss of appetite, etc. They should each be carefully considered.

2. *Thorough Physical Examination.*—This cannot be too strongly insisted on. Many early cases are overlooked because the doctor does not remove the patient's shirt. It is absolutely impossible to detect the early physical signs without a careful and thorough examination, which may have to be several times repeated, before definite lesions can be detected.

The physical examination is the most important of all procedures. Although by itself it may leave us in doubt, through physical examination, in association with the symptoms mentioned above, we may be able to arrive at a definite conclusion.

3. *Examination of Sputum.*—Although tubercle bacilli are not found until there has been some destruction of lung tissue, they will often be found very early in the disease, even when the symptoms are slight. When they are found we shall be able to give positive proof of the existence of the disease. They should therefore be sought; still, this simple procedure is neglected by a great many physicians. The city provides a laboratory where the examination is made, yet the number of physicians who availed themselves of this privilege last year was but 393 out of a total of about 1,300 in the city of Baltimore. Allowance must be made for those who do not see tuberculous cases, for those engaged in specialties and for those who have sputum examined elsewhere; still I think it may be safely estimated that 50 per cent. of practitioners do not avail themselves of this privilege. But 1,932 examinations were made in this laboratory in the past year.

Another proof to be kept in mind is that failure to find tubercle bacilli in the sputum does not exclude the possibility of the disease, as they may be absent from the sputum, or they may not be found microscopically. Repeated examinations may be necessary. Their demonstration is positive proof of the existence of tuberculosis, but we should not exclude it when they have not been found.

4. *Tuberculin Diagnosis.*—The diagnosis of tuberculosis by the use of tuberculin is now within the reach of the general practitioner. He may employ the ophthalmic or the skin test, or may use tuberculin subcutaneously. There is no reason why these valuable tests should not be generally adopted, the only precaution necessary being the proper attention to dosage.

It is only by careful attention to all these points that an early diagnosis is possible, one being corroborative of the other.

Another important measure which should be more generally employed is the examination of persons who have been exposed to the disease, either in their own homes or elsewhere. I have on many occasions discovered early cases by this means.

Tell the Patient the Truth.—After we have made a definite diagnosis, it is our duty to tell the patient the whole truth. It will not be so great a shock to him, if we are able to say that the disease is in its early stages, and that proper treatment, adopted at once, will restore him to health, as to wait until the disease has advanced, when he discovers the truth himself, or is told by another physician, and when we cannot honestly give him a favorable prognosis. There is no justifiable excuse for secrecy; the theory that it does the patient harm to know the truth has not been the experience of those who are working in dispensaries and sanitariums. It is impossible to institute proper treatment unless the patient understands the objects to be obtained; consequently those who hide the truth are not giving their patients the full benefit of their knowledge. A patient will not take the proper measures to protect those around him, unless he knows that he has a contagious disease, which he can communicate to them.

A great many doctors consider it poor business policy to tell the patients, as they may lose the patronage of the latter. In this they make a great error, as they will surely lose the patients' confidence and respect; when the truth comes to the patients they are very likely to say that the doctor did not know, or that he deceived them.

It is not sufficient to tell the patient that his lungs are weak, or that he has catarrh of the lung, or that he has a deep-seated cold, which will clear up when warm weather comes, or a great many other indefinite or meaningless terms, which many men do, but they should be told in terms which they understand; the disease should be called consumption. As I said before, it does no harm, and the doctor is saved from subsequent humiliation or abuse.

That the patient is not told the truth is the observation of everyone who has attended many advanced cases. It is a disgrace to the profession when a patient, writing to the public press of his individual experience, relates that he consulted four or five doctors, among them a personal friend, and also visited a dispensary in our city, that none of them told him the truth, and that in consequence he was allowed to subject his family to infection for a considerable length of time, when he should have taken measures to protect them, and should himself have been under proper treatment.

The time is not far distant when the doctor will be held legally responsible when he neglects the proper measures for diagnosis, or hides the truth afterward. I do not think it would be difficult to convince a jury of the doctor's responsibility and liability, if he failed to examine the sputum, when it could be shown that that was all that was necessary for a diagnosis.

Another practice that has been carried on by some is to deny to the patient the existence of tuberculosis, when the latter has been informed, either at the dispensary or by a conscientious physician, the result being that all prophylactic measures were discontinued, the patient given false hope, and the influence of the dispensary decidedly diminished in the neighborhood. Such a case has recently come under my personal observation. Such a practice cannot be too severely censured.

RESPONSIBILITY TO SOCIETY

The further the obligations are removed from the individual the fewer the number of those who appreciate them; consequently a larger number fail in their obligation to society. One of the principal reasons for this is that the individual must often sacrifice his inclination for the good of society. The old Mosaic law which required the leper to cry out "unclean" at the approach of anyone may seem a hardship, but it was the means of preventing the spread among the Jewish nation of a very loathsome disease. We are unwilling to subject our patients to partial or complete isolation, whereas this must become the most effective means in preventing the spread of the disease. We must discourage marriage among consumptives, unless the disease has been arrested for a considerable time. We must prevent a tuberculous mother from nursing her babe, not only because of the ill effects on the mother, but because of the very great danger of infecting the child. We must protect the laundress who washes infected clothing and the woman who cleans the rooms. We should protect the family whose cook has tuberculosis. All these and many other obligations belong to the physician and should be assumed by him.

RESPONSIBILITY TO THE STATE

This requires that the physician fulfil the requirements imposed on him by law. Has he done so? The advantages of registration no longer admit of discussion, and this has been enacted into law. It is therefore the duty of the physician to register his cases as soon as he makes a diagnosis. I cannot see what possible objection he can have to doing so, yet of over 2,200 physicians in this state, only 595 reported one or more cases to the State Board of Health; most of these reported one each, and not more. It may be only fair to state that probably 25 per cent. of the physicians are not in active practice, or may not have tuberculous cases under their care. Assuming that there are 1,600 physicians in active practice in this state (Maryland), who see cases of tuberculosis, but 595 or about 37.5 per cent. are fulfilling the requirements of the law.

These 595 physicians reported 1,483 cases to the State Board of Health, while seventeen dispensaries and hospitals reported 1,130 cases and the tuberculosis nurses reported 870 cases. The Phipps Dispensary alone reported 33 per cent. of all the cases.

Although I have been unable to obtain the exact figures, I think that I am conservative when I state that 90 per cent. of all cases reported to the State Board of Health are in the second or third stage of the disease, and not more than 10 per cent. of early cases. This would indicate that the diagnosis is not made early, or else that the cases are not reported early.

Some men allow their cases to be reported by the dispensary or the nurse, because they do not care to take the time to fill out the very excellent form of instruction required by the state board of health, for which the state allows a fee of $1.50, and which is no more voluminous than that required by every fraternal or beneficial society, and for which he receives a fee of $1.

I wish to make a plea for a more general observance of this requirement. There should also be a more general observance of the law requiring rooms occupied by consumptives to be fumigated when they are vacated either by death or removal. No objection by householder or landlord should deter us from this obligation.

There are several reasons why these conditions exist: (1) incompetency; (2) carelessness; (3) economic considerations. There is no justification for any of these.

1. *Incompetency.*—There are abundant opportunities for every practitioner to acquire sufficient skill in physical diagnosis, if he will avail himself of them; but he need not be a skilled diagnostician; if he will faithfully watch the symptoms mentioned above he will generally be able to make a probable diagnosis. If he be in doubt, consultation is always available.

2. *Carelessness.*—This is thoroughly inexcusable, but may be in a great measure overcome by the adoption of a definite plan of examination, which should be recorded.. Such a procedure will require very little time, when once adopted as a habit.

3. *Economic Considerations.*—These are rather more difficult to combat, the enormous increase in the number of practitioners, the multiplication of dispensaries and hospitals, the increased cost of living, the reduction of fees, and many other considerations—all combine to make the practice of medicine less remunerative than formerly, and thus increase the temptation for irregular and unprofessional practice, but, as I have tried to show, even from this standpoint it is a short-sighted policy, that will react to the disadvantage of the one pursuing it.

In conclusion I will appeal to all members of the profession to uphold their traditions for honesty and unselfish devotion to the interest of their patients. I appeal to them to recognize the fact that they are the most important factor in this great campaign, which has just fairly begun, but which gives promise of developing into one of the most popular movements that has ever existed. I appeal to them to recognize their obligations before they are compelled to do so by popular demand.

102 East Twenty-fifth Street.

THE TREATMENT OF CANCER OF THE UTERUS WHEN TOO FAR ADVANCED FOR CURE BY EXTIRPATION OF THE UTERUS *

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Although my primary purpose is to speak of the treatment of inoperable cancer of the uterus, a few words regarding the general subject of uterine cancer may not be out of place.

Most important in this connection, it seems to me, would be the formulation of some plan whereby the number of women hopelessly so afflicted may be lessened. This can be accomplished only by teaching women that there is no one symptom peculiar to cancer alone. While it is true that the disease is more likely to occur about the climacteric period, yet no period of life is exempt from it. Its approach is so insidious that, when symptoms of an alarming nature manifest themselves, the disease is usually so far advanced that it comes under the head of "inoperable cancer." Women must be taught to apply to their physicians on the first manifestation of a pelvic symptom at variance, even though very slightly, with their normal condition; in particular a variation of the menstrual function, including a leucorrheal discharge, and especially if their age be past 40 years; though, let me reiterate, they must be made to realize that no age is exempt from uterine cancer.

In Germany women have been taught by Duehrssen and Winter, especially by the latter, the necessity of early consultation with their physician, when any abnormal symptom presents itself. The teaching by Winter has been through the lay press, with the result that already in many parts of Germany there is a decreased percentage of "inoperable cancer" patients. Physicians, too, have learned the necessity of carefully examining every patient that applies to them with such symptoms, and the wisdom of expert consultation whenever there is question as to the diagnosis. The American conception of what is ethical is somewhat at variance with that of Germany; yet similar methods must be adopted here if we are to gain early practical results. It is for such men as those composing this Section to determine on the best means of diffusing information among women without violating the standard of ethics, and I would earnestly suggest that a committee be appointed to consider this important matter and report its conclusions, with a view to letting the main body of the Association take such action as may be most useful to womankind, and at the same time strictly ethical.

I am convinced that only by such means can we hope to lessen the mortality from cancer of the uterus, and that the early recognition of the disease, followed by prompt proper intervention—not the very extensive abdominal operations now practiced by many, particularly in Germany—will prove an important agency in decreasing the death rate from this malady.

Since the revival of the abdominal route for the extirpation of cancerous uteri, and the employment of the modified paravaginal section for extirpation by the vaginal route, the number of patients left to die of the disease without any surgical attempt at cure has been lessened. Nevertheless there is a large number of women for whom nothing can be done, save palliative treatment.

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* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

It is unfortunate that women with inoperable uterine cancer should be undesirable patients at most hospitals, for proper hospital care is fully as necessary to these unfortunates as to those still in a condition permitting of an attempt at radical removal of the disease by surgical intervention. It is, indeed, pitiful to see how little is done to mitigate the misery of these sufferers; how frequently every shadow of hope is taken from them by some unfeeling person—very often the physician—who does not withhold the truth as to their condition.

The palliative treatment of cancer becomes especially important when we recall that, by preventing the nutrition of the cancer cells, we cause them to undergo retrograde metamorphosis and thus destroy their activity. We know from the experience of the late John Byrne and many others, myself among them, that even in carcinomatous uteri of long standing the further progress of the disease may be checked by proper heat application. It has been asserted by some, particularly by Byrne, that cures even have been brought about by such means, the cancer cell having very little power of resistance against heat. The late Lawson Tait asserted that he had seen some spontaneous cures of cancer. I myself saw such an instance: a pathologist of international repute had made the positive diagnosis of cancer, and so far as the macroscopic appearance of the tumor went, his opinion seemed correct. When a few years later the woman died of some ailment of a different nature, the postmortem failed to show evidence of the tumor found by me at the time of making the abdominal section. The carcinomatous structure had disappeared. This observation, personally made, would have a tendency to verify the statement of Lawton Tait, that an exploratory abdominal section, in some instances, suffices to bring about a cure of intra-abdominal cancer. In addition to the case verified by the report of a prominent pathologist, I saw another tumor, which, from its macroscopic appearance and from the clinical course of the patient prior to the doing of the abdominal section, was likewise an inoperable cancer. Not only I, but Drs. John Wyeth and Sims, who were present at the time the exploration was made, thought that the tumor, for the purposed extirpation of which the exploration was made, was a carcinoma. The abdomen was closed, and then, for more than ten years, I observed the woman. The tumor gradually disappeared, and three years later not a vestige of it could be felt. Moreover, the woman, who was emaciated at the time of operation, became robust, the picture of health, without further treatment. The family had been told, after the exploratory operation, that the patient would probably die within a year from the cancer which, even before the abdomen was opened, was thought to be present. Inasmuch as no histologic report from an excised piece of the neoplasm was obtained in this instance the clinical diagnosis lacks confirmation by the microscope. There can be no question, however, that the system, under some circumstances, checks the proliferation of cancer cells and occasionally succeeds in destroying their life

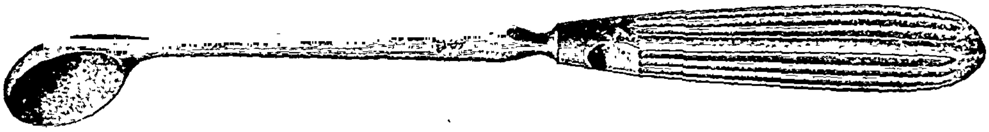

Fig. 1.—Heavy curette or "cancer spoon" for scraping a carcinomatous uterus.

Czerny[1] reports an instance of "inoperable" cancer of the vaginal part of the cervix, for which a palliative operation was done. Re-examination of the patient, five years and three months later, showed her to be absolutely cured. He mentions several other instances of spontaneous cure of cancer.

Lomer,[2] of Hamburg, in his article on the curability of carcinoma, also quotes cases of similar cure.

Chrobak[3] has observed a number of patients on whom palliative operations were done, with entire recovery following.

It seems certain that small cancer remnants left in the body are sometimes taken care of by the system. What the conditions are in such instances no one has yet determined. An example illustrating this was the case of an incipient cancer of the tongue, for which I operated in association with the late William T. Bull in 1888, when I was still doing general surgery. The clinical diagnosis was verified by the microscope, and it seemed later from the macroscopic appearance of the tongue, and also from a microscopic examination from the edges of the specimen removed, that a small remnant was left behind; yet the patient eventually made a good recovery, and five years later was living without evidence of the disease.

Clinical experience has shown beyond doubt that palliative treatment may benefit cancer patients by directly destroying the cancer cells with the agent used, and perhaps by forming a protection against the cancer proliferation.

As to palliative treatment by surgical means, the disease in some instances has advanced too far even to allow such a course to be considered, because its application might—yes, in all probability would—leave the patient in a worse condition than before the intervention. We know that in young persons especially the neoplasms grow rapidly, so that the nutrition of the tumor does not keep pace with its rapid growth. The result is that the central part of the tumor breaks down because of the sparsity of blood vessels there. Hence the destruction may have proceeded so far as to make it hazardous for us to use proper energetic surgical means to correct the symptoms caused by the breaking down of the new growth, because of the danger of injury to the bladder or the rectum.

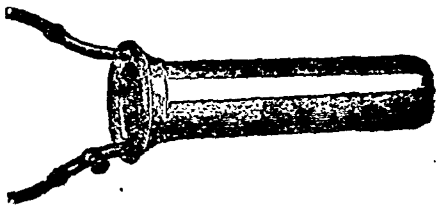

Fig. 2.—Metal speculum with double hull, for use in cauterizing the uterus.

Some surgeons have gone so far as to assert that a refusal to do a radical operation for cancer of the uterus is justifiable only after an exploratory abdominal section has shown it to be impossible, except in those cases in which it is obvious that the bladder or the rectum is already affected. I confess that I consider this going too far, for, while we may still be able to complete the operation, I can not conceive what the patient is to gain, even if she does recover primarily. I look on an operation simply as a surgical possibility when uterine cancer has passed beyond the boundaries of the uterus to such an extent that palpation can readily show that it has done so. I prefer to resort to a palliative operation with a curette and a cautery under such circumstances, and I believe that the results are just as satisfactory as to the longevity of the patient, and far better as to immediate mortality; for the curette and cautery operation should cause no deaths directly, unless from the anesthetic.

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[1] Czerny: Unerwartete Krebsheilungen, Ztschr. f. Krebsforsch., v, 28.

[2] Lomer, R.: Zur Frage der Heilbarkeit des Carcinoms, Ztschr. f. Geburtsh. u. Gynäk., 1903, l, 305-384.

[3] Chrobak, R.: Zur Behandlung des inoperablen Uteruskarzinoms Wiener klin. Wchnschr., 1905, No. 38.

Before beginning the surgical intervention with a curette and a cautery, a careful examination is essential to determine, as nearly as possible, to what extent the neoplasm has progressed. For this purpose a cystoscopic examination of the bladder is important. If the mucosa be found very edematous, or other evidence of inflammation be present, it is obvious that the neoplasm is approaching the bladder, and one must then be very careful in one's subsequent work. If the vagina be extensively infiltrated by the cancerous growth, it is inadvisable to do anything with the curette and the cautery.

I have had a specially heavy curette constructed for doing the scraping as expeditiously as possible. I have named it the "cancer spoon" to distinguish it from the smaller forms of spoons and curettes generally in use. Such a large instrument has an additional advantage; one is not so likely to perforate into the peritoneal cavity as with the ordinary small curette. All readily breaking-down structure is rapidly excavated with the spoon. The bleeding is stopped with an extra large dome-point electrode of a galvanocautery, so that it can be done more rapidly. To avoid burning the vulva and the vagina, I devised a speculum a few years ago which is constructed of metal and has a double hull, cooled by a continuous flow of cold water through the dividing space. In shape it is like the old style Ferguson speculum. The burning or charring is done very thoroughly, so as to leave practically only an outer shell of the uterus. The operation must be controlled by frequent examinations with the finger, lest we perforate the uterus and injure other structures. This has happened with me but once when using the cautery, though it occurred several times while doing the excavating with the style of spoons and curettes generally used. On these occasions I immediately ceased the operation, and no harm resulted. With the large spoon now used by me I have never broken through the uterus. It is well, now and then, to cool off the cavity which is being charred. This is easily done by putting ice shavings, or very small pieces of cracked ice, through the speculum, leaving them for a few minutes and then drying the surface before again applying the heat. Before the cooling speculum was devised I used vaginal retractors, wrapped with gauze wrung out in ice-water; yet this did not prevent occasional burns. With the cooling speculum, burns are entirely obviated.

After the eschar has been thrown off, it is best to use strong tincture of iodin in the cavity once every second day until the cavity has contracted. Or, judging from Gellhorn's experience with acetone, that remedy might be used with even greater benefit to the patient following the casting off of the eschar. Once I saw a fatal secondary result from the treatment. After the eschar was thrown off, a branch of the uterine artery began to bleed. I was called to see the woman in the middle of the night. The artery could be seen spurting. The cavity was tightly tamponed, but this did not stop the bleeding. By the time I saw the woman again, after returning home and preparing myself more energetically to control the hemorrhage, she had lost so much blood that she died of acute anemia. While it is asserted that patients have been cured by such treatment, I can not verify such results among patients observed by myself. I have seen, however, a number of patients whose lives were prolonged three years and more, and who were made comfortable for that period. It has been my custom to repeat the cauterization whenever necessary; i. e., when even a little bleeding showed itself, or if there was evidence of softening of the diseased uterine structure. I have recauterized some patients six times, and oftener, during three or four years.

A Paquelin cautery, a galvanocautery put in operation by a battery, or the old style "hot iron," are not so serviceable for this work as is the heating of the electrodes by the direct, or by the alternating current supplied for lighting purposes. I know of no method of treatment that will control the two symptoms, bleeding and offensive discharge, so satisfactorily as that of excavation and cautery.

The late Marion Sims used strong chlorid of zinc solution for this purpose. The objection to this procedure is that one can not know in advance how deep the destructive process of concentrated solutions of chlorid of zinc may go. In one instance that I have observed it went to such depth that the slough caused both a vesicovaginal fistula and a fecal fistula. It has been asserted that deep destructive action can be avoided by not allowing the tampon which is impregnated with the solution to remain for more than a day, or even for so long. I have found it very difficult to remove such a tampon until it has become loosened by the chlorid of zinc slough being ready to be cast off spontaneously. Indeed, I have found it impossible without causing so much traumatism to the underlying tissue that profuse bleeding must result. More important, however, is the question: If the full action of the medicament is not taken advantage of, why use it at all? Furthermore, despite the precautions that one may take by employing bicarbonate of soda, according to the directions laid down by Sims, I have never seen an instance in which the cauterizing effects of the zinc did not occur on parts other than those for which it was intended, and particularly in the vagina.

Carbid of calcium was also used on a number of patients many years ago, but, like other agents of supposed curative value, it proved a complete failure in my hands. Moreover, its caustic action is fully as intense on parts where it is not desired as is that of strong chlorid of zinc solution; and I know of no way to prevent this.

Several years ago, when the treatment of inoperable cancer with pyoktanin became known, through the late Mosetig-Moorhof, I used this remedy very extensively, and believed that, in some cases, I observed good results. A continuance of the observations made, however, proved my conclusions fallacious. Undoubtedly now and then a patient is benefited by the injections into the tumor, so far as the local condition is concerned, but the improvement is not permanent. This applies also to the injections with absolute alcohol, for which, for a short time, extravagant claims were made.

at intervals of from three to four hours in the last stages of the disease, if they were not more or less uremic.

In summing up, allow me to repeat that we must formulate a plan whereby we can teach women, not singly here and there, but in the mass, and in an ethical way, the insidiousness of the onset of cancer of the uterus; the necessity of consulting a physician on the first manifestation of any abnormal pelvic symptom; and the fallacy of the view that cancer occurs only at the climacteric period.

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39 East Sixty-first Street.

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BROOKLYN

As a preliminary to this paper I wish to state, in the most unequivocal terms, that the palliative treatment herein recommended is not advocated as a substitute for the early extirpation of the diseased structures by appropriate surgical procedure, but that it is applicable to cases in which the time has passed for such treatment, and also in certain cases in which the consent of the patient can not be obtained for early hysterectomy, who will accept a cautery operation as an alternative; neither is it my purpose to inquire into the etiology of the disease or review the literature of the subject, but to study it chiefly from the clinical point of view, with the reference to the one topic of palliation.

The prophylaxis of smallpox by vaccination, the curability of diphtheria by antitoxin, the relief of epidemic cerebrospinal meningitis by Flexner's serum, and the cure of certain cases of septicemia by antistreptococcus serum, have marked epochs in medical progress. Just at present the professional mind is focused on the preventability and curability of tuberculosis, with results which must count for a lessened mortality and increase in average longevity, with a corresponding freedom from avoidable invalidism and suffering.

The advocates of preventive medicine are engaged, in no small measure, in the efforts to discover the cause and cure of cancer; but the cause has so far escaped observation; and it is painfully evident that early radical measures have about reached the limit of their curative efficiency. It must be apparent, however, to the scientific and humane practitioner that the palliative treatment of uterine cancer is not receiving that attention which the subject demands, and it is to this aspect of the problem to which I ask your considerate hearing.

In 1903 I presented a paper on this subject to the American Association of Obstetricians and Gynecologists, while on previous and subsequent occasions I have called the attention of the profession to the appropriate treatment of these most unfortunate and neglected patients, and in what I shall say on this occasion I shall quote freely from that paper.

I count myself fortunate in presenting this topic for your consideration to-day, not alone from the distinguished character of this representative body, but for the larger opportunity it affords of reaching so great a number of the medical profession, in the hope that these suggestions will stimulate a renewed effort for the relief of a large class of unfortunate sufferers.

What I have to say will treat more of cancer of the cervix than of cancer of the body of the uterus, though in principle it applies to both. The specific indications for treatment will depend on the local involvement and the extent of tissue destruction; the end to be attained is to get rid of all diseased structures possible. When the disease has passed beyond the cervix, involving the bladder, the broad ligaments, and adjacent structures, it may be advisable to limit the treatment to the superficial area of ulceration. The cautery or caustic applications which result in opening into the bladder or rectum or which involve the pelvic viscera are to be avoided. The important problem is usually the exercise of that judgment which decides the conservative limit of approach and that skill which renders such effort availing.

After long personal observation and experience; I am convinced that no palliative treatment is at once so simple and effective as the thermocautery; and one advantage it has over all other methods resides in the fact that it effectively closes the lymphatic vessels, as is noticed in thermocautery operations elsewhere, notably in operations for hemorrhoids.

A well-equipped galvanocautery plant for hospital work leaves nothing to be desired; and as between a portable galvanocautery apparatus and a Paquelin cautery for non-hospital cases circumstance will decide. Those who attempt the operation with one apparatus will not infrequently regret another had not been supplied. Whether the superiority of the thermocautery over caustics is due to the influence of heat on the diseased cells beyond the area of cell destruction is a matter of opinion, but, in view of the better clinical results of the former, the deduction suggested is altogether logical and probable. To meet the varying indications a variety of platinum knives and electrodes are necessary.

I desire to give special emphasis to the fact that it is quite exceptional for the patient to suffer pain after the use of the thermocautery, provided, however, the mucocutaneous surfaces are not seared or burned. This requires tact and experience. I have usually found it easy to protect the vaginal surfaces from the injurious heat of the cautery by the use of strips of asbestos paper of proper size and shape. Where large areas of ulceration are present the curette may first be used to advantage. This is likely to result in pretty active hemorrhage. This bleeding is usually easily controlled by the application of pledgets of cotton applied with pressure, first dipped in dilute acetic acid, usually of half strength, or by the use of the adrenalin chlorid. After this, the cautery knife is to be applied at a dull red heat until the surfaces are thoroughly charred. The after-dressing consists of 5 per cent. iodoform gauze, reapplied daily, after cleaning the parts with liquor cresolis compositus or permanganate solution douches. The use of peroxid of hydrogen is likely to provoke hemorrhage.

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Some surgeons assert that the chemical destruction of the new growth is far superior to the destruction by means of a curette and cautery. I have made painstaking studies on this point, and am of the opinion that, if a patient is still in a condition for the application of such direct surgical methods as the curette and cautery operation, they afford the best palliative means at our disposal.

After cauterization has been completed, nothing further is necessary until the eschar begins to slough and excretions from the wound begin. Then the treatment with tincture of iodin, or with acetone, as advocated by Dr. Gellhorn, should be begun. After applying the iodin, it is best to put a tampon of absorbent cotton or sterile gauze into the cavity, so as to get it dry after treatment. The use of vaginal douches, so frequently employed to overcome discharge and to keep the patient clean, should be prohibited.

Gellhorn, of St. Louis, has published an article[4] which seems to be of value. He utilized the laboratory observations of the effect of acetone in a practical way on cancer of the uterus. He claims for it that it hardens the tissues. His method is as follows:

The new growth should be excavated as thoroughly as possible, and then the acetone applied through a Ferguson speculum. The pelvis should be elevated and the solution poured into the speculum. Care should be taken not to allow the acetone to come in contact with the external genitals. The surplus of acetone, after the remedy has remained in contact with the raw surface for from fifteen to thirty minutes should be absorbed with cotton. The treatment should be repeated every two or three days. Gellhorn maintains that this invariably relieves the patients of the main symptoms.

An analysis of the results with trypsin treatment does not seem to me to make it desirable to give trypsin a prominent place.

Fulguration is one of the latest therapeutic agents employed in the treatment of cancer. Czerny[5] asserts that if all the carcinomatous structure can be made accessible to fulguration the cancer may be cured, because fulguration does destroy the cancer cells. The "dose" of fulguration may be administered with exactness, and the treatment by the method is elective. With the patient under the influence of narcosis, fulguration may be applied for an hour, then the exposed cancer area may be excavated, and the wound surface again fulgurated for from ten to fifteen minutes. Wonderful therapeutic results are claimed for the treatment, which was first described by Keating Hart, of Marseilles.

As with all new remedies, one is apt to become overenthusiastic; I have so often been compelled to recede from an expressed opinion that I now believe it safer to test a remedy thoroughly before endorsing it.

This much we may say from accumulated experience: If in young persons with cancer beginning in the cervical canal the disease has perceptibly progressed beyond the line of so-called operability, life is not long to be enjoyed, no matter which of the palliative forms of treatment at present known to us is employed.

It may be that in the future a valuable therapeutic agent will be found in the ferments, judging from the results obtained by the injection of placenta ferment; but at present it is too early to be sanguine. This is said because we have been disappointed in every instance in which we were led to hope, from the claims made, that we had at last in our possession a remedy that would cure cancer of the uterus. I call attention only to a few of the more prominent ones: the Roentgen rays, radium, trypsin, etc.

The work of Professor Bier[6] is exceedingly interesting. Bier began his experiments—the injection of blood of a different species into malignant tumors—and published his investigations[7] in 1901. His object was to cause an artificial inflammation with an elevation of temperature and thus demonstrate that inflammation and fever were associated, especially so far as concerned the chemical process. He selected defibrinated blood from swine for his experiments, because hog's blood causes, when injected into cancerous, or into sarcomatous tumors, decided local and general manifestations. When 10 to 20 c.c. of such blood are subcutaneously injected, invariably, after the lapse of several hours, an inflammation is caused at the point of injection. This attains its maximum degree of severity in from one to three days. Then it gradually subsides. On repetition of the injection with such different blood the reaction is caused by a smaller quantity.

From lamb's blood, used by Bier in other diseases, a much milder reaction resulted. Never having observed any permanent ill effects from such injections, he believes them the safest method of producing fever and local inflammation. While the defibrinated blood does not contain leucocytes, these are supplied in abundance by the body of the recipient of the blood. Such blood does not seem to have any influence on normal tissues.

The action of the blood on tumors varies. Almost invariably, in suppurating carcinomata, the secretions are diminished. On existing pain, caused by the tumor, it does not seem to have marked influence. The growth of carcinomatous neoplasms is not noticeably influenced. The experiments are still being continued.

Though we know that women with inoperable carcinoma of the uterus have been kept alive for many years, apparently entirely cured, we can not be absolutely certain that there are not within the body some remaining cancer cells with latent avidity. I believe the recurrences after five years and more that have been reported from time to time may thus be explained. In other instances, it is likely that the diagnosis of carcinoma lacked verification under the microscope by a competent pathologist. To my personal knowledge, several such patients have been reported as cured by palliative treatment.

The pain that is caused by pressure of the tumor on nerves must be combated with narcotics. Of these, opium and its alkaloids are the only ones that give entire satisfaction. A number of substitutes have been proposed, with the assertion that they act equally well or even better; but none of them has stood the test. I do not hesitate to confess that I am an advocate of euthanasia in the case of such patients, if the giving of relief from pain by the administration of remedies that we are sure will give such relief can be so called. One should begin with as small a dose of morphin as is sufficient to relieve a patient, and then not repeat it oftener than necessary. The dose must be increased later, and the intervals of administration shortened. I have had patients who required five grains of morphin at intervals of from three to four hours in the last stages of the disease, if they were not more or less uremic.

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[4] Gellhorn, George: A New Mode of Treatment for Inoperable Cancer of the Uterus by Means of Acetone, THE JOURNAL A. M. A., 1907, xlviii, 1400.

[5] Czerny: Ueber die Blitzbehandlung der Krebse, München med. Wchnschr., Feb. 11, 1908.

[6] Bier, August: Beeinflussung bösartiger Geschwülste durch Einspritzung von artfremden Blut, Deutsch. med. Wchnschr., 1907, No. 29, 1161.

[7] München. med. Wchnschr., 1901, No. 15.

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the cervical canal, an expanding double tenaculum forceps that when opened held so firmly that any practical degree of traction could be made. A circular fissure, close to the vaginal junction, was then made for the reception of a platinum wire loop. By continued traction while this wire was slowly eating its way through the structures the entire cervix was removed. His next step was to use a sharp curette within the whole area of the uterine cavity. This afforded sufficient space for the introduction of another electrode, having a larger cauterizing surface, going over this entire surface. The cavity was then sponged dry and a tampon soaked in acetic acid and tannin applied, and the parts made dry; after which a dome-shaped cautery instrument brought to a cherry-red heat was slowly applied to this whole area until the parts were completely charred and black. By proper application of this thermocautery nearly the entire uterine structure is destroyed, save a shell of tissue and the peritoneal covering.

It was by his skill and persistency that the efficacy of the galvanocautery was established on a solid basis. The skill in the use of the thermocautery was, first, in not going far beyond the area of involvement, and, second, in having the cautery knife hot enough to burn the structures and not hot enough to disintegrate them too rapidly. If the proper heat is not maintained, troublesome hemorrhage may follow. I have seen patients far advanced with cancer of the cervix and uterine body, showing signs of grave systemic infection, who lost their cachectic appearance after thermocautery operations.

The primary objection to the powerful escharotics like mineral acids, caustic potash, etc., is the difficulty, if not the impossibility, of gauging their corrosive action, the pain of which is often atrocious and far greater than that of the thermocautery.

Daily vaginal douches with permanganate of potassium or compound solution of cresol are the best antiseptics. In all manipulations of the parts subsequent to the operation the greatest gentleness should be observed. Generally the use of bivalve speculum should be avoided, as it is likely to impinge on this area. Usually the dressing is best accomplished by having the patient in the Sims position and by using a medium-sized or small Sims speculum. Mention should be made of the utility of oxid of zinc, carbolized, or iodoform gauze. The slough separates usually in from one to two weeks. Daily dressing must be faithfully applied every day until healing follows, or, should it not follow, its use must be continued to keep the parts as aseptic as possible. Where healing is imperfect, and unhealthy granulations reappear, they may be touched with carbolic acid or silver nitrate, pure or diluted as the case may indicate. As in granular surfaces, generally the recognized healing power of silver nitrate must not be forgotten.

In cases in which healing does not follow, or in which the disease returns, the acrid discharge is a prominent factor in the production of pain, and it goes without saying that local cleanliness and disinfection are constantly required.

In hopeless cases this local treatment is a *sine qua non* for the patient's comfort; and it is at this point in the history of many patients that the failure to give relief occurs. It is possible in some instances to train an intelligent nurse to do the dressing, but the skilled hand of the attending physician is most satisfactory. It takes time and patience, but the careful expenditure of both gives the largest degree of comfort and the pain is reduced to the minimum. Sometimes the patient experiences much relief from the local use of cocain, frequently repeated. Not infrequently rectal suppositories containing two grains or more of codein and three of extract of hyoscyamus add materially to the relief of the pain. Later on morphin sulphate in increasing doses may be required to minimize suffering. If this is not well borne the deodorized tincture of opium may be substituted. Again I reiterate the necessity of constant cleansing of the parts, by skilled hands, as indispensable to greatest relief from suffering.

I can not speak from the magnitude of experience which Dr. Byrne presented in his paper to the American Gynecological Society several years ago, in which he stated that he had never known a recurrence of the disease at the part from which it had been thus removed, but that it had reappeared in the fundus, ovaries, or some adjacent structure. In this I have not been so fortunate, owing perhaps to technic less perfect than his. By this method in the report referred to Dr. Byrne operated on 367 patients with cancer of the uterus, of whom at the end of five years 19 per cent. were still alive. This is the most remarkable, as he operated in every case which presented itself, without a single primary mortality. Taking this fact into account, his statistics show most remarkable results, for probably the statistics of no other operator include the cases of so-called inoperable cancer.

The conjecture—well founded in regard to some later ones—that statistics are too often a medium for personal exploitation rather than a scientific record of actual events in support of their authors' declarations, can not be entertained by those who knew Dr. Byrne personally, in regard to his statistics, which are open to no such suspicion or doubt, and are entitled to the confidence of the profession.

There is, it should be mentioned, no reason why in recurrent cases the thermocautery can not be repeatedly applied with benefit. It should be mentioned that at the time these several cases reported came under observation the disease was so far advanced as to leave no doubt of its malignancy.

I regret that want of time prevents more than passing notice of the utility of *x*-ray and radium treatment in uterine cancer. My use of either has not been sufficiently extensive to enable me to speak authoritatively as to their value. So far as my experience goes I regard the radium as far the more useful, in that granulating surfaces take on more healthful activity after its use than that which follows the use of the *x*-ray, and this is, I believe, in keeping with the recent observations. As illustrative of the results of palliative treatment I report briefly the following cases:

Case 1.—The patient, a married woman, aged 43, entered the Skene Sanitarium, in March, 1901, with a cauliflower excrescence of the cervix as large as a man's fist. She had had numerous conceptions, all of which terminated in miscarriage; but as these were intentionally procured there was a well-grounded suspicion that her disease was related to the incident traumatism. This growth was reflected on the vaginal wall anteroposteriorly and laterally, which forbade a primary effort at hysterectomy. On March 14 I removed the growth by the galvanocautery and amputated the cervix at the vaginal junction. The surfaces healed kindly, save a small area on the uterine stump about the size of a silver half-dollar. On May 21, following, the patient re-entered the sanitarium and I performed an abdominal hysterectomy. Prior to this operation she was weak, anemic and in poor physical condition. Her convalescence was satisfactory. She was kept under monthly observation by her physician, and in May, 1902, a year later, there appeared at the seat of the vaginal cicatrix a nodular mass rather larger than a silver twenty-five-cent piece. At this time she entered the Memorial Hospital and I removed a button of structure, opening from the vagina into the peritoneal cavity, the size of a silver half dollar. I examined her during the past year and she is in perfect health, with no sign of the return of the growth.

Case 2.—The patient, a married woman, aged 46, German, multipara, dated her trouble to a miscarriage seventeen years previously. She had a large, bleeding, ulcerating cauliflower excrescence of the cervix, extending to the vaginal walls, which nearly filled the vagina. The discharge was offensive and the patient's health was seriously impaired from the frequent hemorrhages, associated with marked cachexia. She entered the Memorial Hospital Sept. 23, 1902, and on the 25th I removed the entire growth by the thermocautery. In two months' time it had healed under daily dressings, save for a cup-shaped cavity three-quarters of an inch in diameter and one-half inch deep. The patient's general health was greatly improved. Owing to non-healing she had two more thermocautery operations in November, 1902, and June, 1903. In November, 1903, the disease having made some progress without materially affecting the patient's general health, Roentgen ray apparatus was installed in the home and on every second or third day for nearly three months treatment was given. This was followed by the use of radium and the ulcerative process was greatly retarded, and the patients general health fairly maintained with but slight pain, up to the time of her death, May 7, 1904. For several weeks previous to her death the normal anatomic relations between the vagina, bladder and rectum were altogether lost and the amount of gauze daily used to fill this cavity amounted to many yards. During the twenty-one months of attendance the patient was visited by myself or my assistants about 750 times. It is at once apparent that such attention is most exacting in its demands on the attendant, but it demonstrated the fact that almost entire freedom from pain was the result, and that it was worth all it cost.

Case 3.—The patient, a married woman, German, multipara, entered the Memorial Hospital in September, 1902, with carcinoma of the cervix. The typical symptoms of malignancy were in evidence. I did a high thermocautery operation, entering well up into the uterine cavity, which was unexpectedly followed by prompt healing. About four years ago the patient was in excellent health locally and generally; since that time I have lost track of her owing to the absence of her physician, Dr. Frederick A. Cook.

Case 4.—During March, 1896, a married woman, multipara, aged 42, came under my observation with typical cancer of the cervix, accompanied with extensive involvement. Hemorrhage was violent and the patient was cachectic. She was greatly exsanguinated and very weak. She entered St. John's Hospital in March, and I did a high galvanocautery amputation as soon as her health permitted. She made a slow but satisfactory recovery, as far as the healing and local symptoms were concerned, and after two or three months she was able to resume her family duties. In November of the same year she entered the Bushwick Hospital for extirpation of a large gland of Bartholin. At this time there was no sign of return of the cancerous growth. On June 16, 1897, she re-entered the Bushwick Hospital, being seven months pregnant. The disease had returned, springing up around the old stump. After watching its behavior, I feared, from the hardening and infiltration of the uterine and contiguous structures, labor might induce rupture of the uterus, and on July 18, at the eighth month of pregnancy, I removed the diseased growth, which encircled the uterine outlet, by the thermocautery. No shock followed and the patient was delivered of a healthy living child on August 6. Her convalescence from the confinement was satisfactory, as was the healing after the cautery. She enjoyed good health for nearly a year. Then the growth reappeared and she entered the Central Hospital, June 21, 1898, and I removed as far as possible the cancerous mass which had returned. She returned home August 25. The healing was not satisfactory and she died a few weeks later from cerebral embolism, which only anticipated the inevitable results of her condition.

In the cases reported, ultimate recovery from the disease was not expected, and no promise of cure was held out to the patients. Patients 1 and 3, after periods from four to eight years, according to accepted standards, were cured. Patients 2 and 4 were greatly benefited and their lives were prolonged for years with very little suffering—a result unattainable so far as I know by any other method of treatment.

In view of these results, I appeal to the members of this Association, and to the medical profession everywhere, not to allow these cases of so-called inoperable cancer to go on without an honest effort to afford relief by the means herein recommended; these efforts will, I am convinced, be appreciated alike by the sufferer and her friends, will give the physician the sense of obligation and duty discharged, and perchance save some life to happiness and usefulness.

1050 Park Place.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. BOLDT AND CHASE

Dr. G. Betton Massey, Philadelphia: I hope that within five years, as the undesirability of stimulating cancer tissue by traumatism is fully appreciated, we will see the end of cutting into the tissue itself, whether by the sharp curette or the knife. I protest against the curette in living cancer tissue as productive of regional and distant metastases. The tributes to the late Dr. Byrne in the papers on the thermocautery are pleasing and indicate progress in the right direction. While the thermocautery in cancer of the cervix represents improvement on previous procedures there are three practical objections to it: 1. The difficulty in avoiding accidental burning of the vagina. 2. The difficulty in maintaining a sufficiently high heat at the tip of the instrument. The loop must be heavy and the chances are that most of the heat is expended at the proximal end of the loop rather than at the tip, where the disease is most virulent, thus rendering the destruction of the actively-growing periphery uncertain. 3. The third objection is the horrible odor emanating from the slough during its separation, compared with the slight odor from sloughs produced by the electrosurgical use of zinc mercury ions. All these difficulties are avoided by the use of the electrochemical method, the technical details of which may be briefly stated as follows: With the patient in either the dorsal or Sims' position, and reclining on a large, moist kaolin pad, slender zinc needles of sufficient length and insulated to within 2 cm. of the tip are amalgamated and inserted in the diseased tissue and a current of 100 milliamperes turned on and maintained for thirty minutes. As the zinc-mercury points are connected with the positive pole the tips are dissolved and the two metals, in the form of ions, are driven into chemical combination, with the cancerous tissue, devitalizing and sterilizing it. The applications are repeated daily, being well-borne without anesthesia other than a possible dose of morphin, until a total current of 1,000 milliamperes has been employed for an hour, or the tissue seems free of the living growth, when they are intermitted for three or four weeks to permit the sloughs to separate. The best results are secured in the earliest cases, and in patients who are carefully watched for years afterwards and replaced under the method on the slightest evidence of abnormal conditions.

Dr. J. H. Carstens, Detroit: The only difference virtually between my treatment and that of Dr. Chase is that I do not, as a rule, use the galvanocautery, but use chlorid of zinc, which I think accomplishes identically the same results. I teach the general practitioner, especially the practitioner from the country, to watch these cases, examine them every two or three weeks, and on the appearance of a little raw spot and the recurrence of the growth, it may be only the size of a pea, to remove it immediately and put in a wad of cotton with a saturated solution of zinc chlorid so that it will be cauterized, and this should be repeated when necessary. Of course, the cancer that is inside and is not ulcerated does not produce the serious results that we get from the ulcerated condition. The physician curettes thoroughly, cleans and cauterizes, or uses the *x*-ray, and the woman thinks for six months that she is well. Then there will be recurrence. Last year at the meeting of the Michigan State Medical Society I read a paper urging that a circular be issued by the state board of health on what women in the "cancer age" should know about cancer. A few of the things suggested were that a woman who was flowing more than usual was in a suspicious condition; that a woman who had a discharge at that time was in need of examination; that a woman who had a discharge which became irritating ought to be thoroughly examined. The circular should be small, just about ten lines. It must be short, otherwise, women will not read it. The State Board of Health has agreed to issue such a circular. It will be furnished to all the county societies so that all the physicians can distribute them. I furthermore suggested that cancer be taken up in the same way as has tuberculosis; and that every year, on a certain day in the year, there be what may be called "cancer day," when the people shall talk about cancer, and the symptoms of cancer, and every paper in the state shall publish an article on cancer. In this way I believe women would be led to consult their physicians before the condition was past hope.

Dr. C. C. Frederick, Buffalo: I have had some experiences which have been very satisfactory and which lead me to emphasize the points brought out by Dr. Boldt and Dr. Chase in the effort to stimulate general practitioners to make an effort at palliative treatment in inoperable cases of cancer of the uterus, and with the idea of lengthening the days and of securing some comfort for these poor unfortunates. I believe that no cancer of the cervix which has gone beyond the limits of the body of the uterus ought to be subjected to attempts at radical removal because it is futile. But the use of the curette and the cautery does do a great deal for these patients and some of them are cured. The patients will get rid of the infection which occurs; their appetites will improve, the anemia disappear, and for a time they will think they are well, and then they will go down again. To prevent them going down so rapidly the curette and cautery should be used every two or three months. In other words, the patient should be watched and the treatment repeated. I have two patients whom I consider cured. In one, a woman with inoperable cancer of the cervix, the disease occurred twelve years ago. I opened the abdomen with the idea of removing the uterus, but found that there was involvement at the vesicoperitoneal fold, and as she had been bleeding a good deal I tied both uterine arteries and closed the abdomen. I scraped out the cervix and used a cautery. She recovered, and to my astonishment that woman is living to-day. There is a hard cicatricial mass present, but she says that she is absolutely well. I cauterized her only once. What the cautery did and the tying off of the arteries in conjunction with the cautery I do not know. I suppose there was a diminution of the blood supply preventing the further growth of the carcinoma. I have another patient, treated similarly, minus tying the uterine arteries, four years ago last September. I cauterized and curetted the woman four times in the course of the year. The cervix contracted and later I did a total hysterectomy and she is perfectly well to-day. I have four other patients in whom I have done the same thing. The process of constriction due to the cautery, the scar tissue contracting and inhibiting the growth of the cancer cells render it possible often times at a later time to take out the uterus and make a clean operation with the chance of recovery.

Dr. Henry O. Marcy, Boston: I have one criticism to make of Dr. Boldt's instrument; it does not give the hand room. Many years ago I found in curetting that in leaving a piece of cotton about the area and applying the thermocautery, steam was generated in a considerable degree and from that day on my colleagues and I have used a considerable amount of wet cotton packed above and below and we find that the steam thus generated penetrates the connective tissue deeper than the cautery itself and yet does not destroy the vitality of the structure. I believe that we can do a great deal in the palliative treatment of cancer.

Dr. John A. McGlinn, Philadelphia: I think the first part of Dr. Boldt's paper in reference to the necessity of early diagnosis is of special importance. If we fully realized just what this cancer problem means, probably we would be more alive to the necessity of waging an active campaign of education among the profession and laity for the early recognition of the disease. With our present knowledge our sole hope of combating the evil lies in its early recognition. That cancer is on the increase is beyond question. In the decade from 1890 to 1900 it showed, in the registration area, an increase of 12.1 per 100,000 population. Statistics show that it has increased in this area from 53 per 100,000 population in 1890 to 70.8 in 1906. Williams has shown that in England one woman out of eight past the age of 35 dies of cancer. In a recent paper I have shown that in the registration area one woman out of eleven at all ages dies of cancer and past the age of 35 one woman out of nine will die of the disease. The age of greatest frequency is between 50 and 54, when one man in fourteen and one woman in five die of cancer. In the registration area in 1906, had cancer been cured, there would have been a total saving of life of 373,574 years, or a total saving of earning capacity of $224,144,400, enough to endow for all time laboratories and clinics of research which would eventually solve this most important problem of public health. In many parts of Pennsylvania the cancer death rate now exceeds that of tuberculosis. I have shown that if the present increase of cancer death rate and decrease of tuberculosis be maintained the foul plague will displace the white plague as the great curse of mankind by the years 1931. Practically one-third of all deaths due to surgical conditions are caused by cancer. When we realize that the uterus is the site in 27.68 per cent. of all cases of cancer in women, as gynecologists, we know that there is a splendid field for our endeavors. If such measures as Dr. Carstens suggested were adopted much could be done to eradicate this evil. As teachers we should remember that the profession needs to be educated in the need of early diagnosis just as much as the public.

Dr. I. S. Stone, Washington, D. C.: I am not going to discuss the question in its broadest sense. Twenty-five years ago Dr. Bryne taught us the application of the cautery in the treatment of cancer of the uterus and Dr. Van de Walker how to use the chlorid of zinc for the same disease, and I believe we have learned very little since that time. Dr. Smith, of the United States Fish Commission, has recently told me of something which may at some time in the near future be announced from one of the laboratories of the United States making a study of cancer. In a certain lake there have been observed innumerable fish with cancer of the thyroid gland. That at first thought seems a little thing, but there is an association of cause and effect right there which these men are undertaking to sift to the bottom by transplanting the disease into other fish. We have always had a hope that the proof would come of the parasitic nature of the disease. Of course, I know nothing about the project personally or experimentally, but I think that this little ray of hope is something which may give us encouragement and I want every one to believe that we will yet be able not only to teach concerning the danger of cancer, but that we shall eventually find a cure.

Dr. Howard A. Kelly, Baltimore: There are only two or three ways by which we can get around this cancer problem. One is by discovering the cause, and I hope we shall learn something from the work mentioned by Dr. Stone. Another method is by more radical operation. I feel that we have gone to the limit there. Another method is to get at the disease in an early stage. We ought to bend all our efforts to attacking the subject on that side. I would suggest circularizing the public and that we should not be too afraid of talking about these things in the public press. We talk a good deal about tuberculosis. This is a little more recondite, but when we have an enemy to face we have to bring him out in the open. We are entirely too reticent about telling reporters what they want to know, and in this way disseminating the information which will guide the people. One more suggestion is that every woman who has borne a child should be examined at least once a year from her thirtieth to fiftieth year. If this were done we would find the cases which to-day are coming to us too late to be helped. I use curettage and cauterization in these cases, but have a little different method from the one in general use. Dr. Spencer Brown, of Montclair, N. J., told me of the method of surrounding the parts with asbestos. When you get deep into the disease, instead of continually burning the area, use the asbestos around one of the electrodes; do not touch the disease, but hold the cautery while it cooks the tissues. Hold it at one place for three, four or five minutes, and then move it to another point. You will find this a very satisfactory and effective way of using the cautery.

Dr. John Osborn Polak, Brooklyn: In cases which seem beyond the reach of radical surgical procedure, the disease may sometimes be completely extirpated by the cautery. By the use of Byrne's divulsing tenaculum the uterus may be drawn into a large, yet short, Ferguson speculum, and the entire body of the uterus burned out with the cautery, leaving only the peritoneal shell. I know several women who are living from six to ten years after this treatment, who were beyond the reach of radical operation at the time they presented themselves. To make this procedure successful, sufficient time must be taken carefully to char every surface, and to permit the slow radiation of heat. Great credit should be given to the memory of Dr. Byrne for all he did for cancer, and those of us who have lived within the radius of his work can testify to the high character of it.

Dr. Emil Novak, Baltimore: The question of educating the public in the crusade against cancer is one of the greatest importance. I think that in the life-history of cancer we can recognize several stages: (1) From the beginning of the cancer until the woman first observes symptoms; (2) from this period until she brings her symptoms to the attention of the physician; (3) the period between the time she calls the attention of the general practitioner to her symptoms to the time they are brought to the attention of the gynecologist; (4) from the latter period until the operation is performed. These stages are all of variable length, as we all know. Very few men will hold that the surgeon himself is often culpable in delaying operation on cancer. I think that all of us realize that the general practitioner is frequently to be blamed for tardiness in bringing the cancer patient to operation, and that the patient herself is even more frequently to be blamed for allowing her symptoms to go on until she is in a hopeless condition. The only aspect of this general problem on which I wish to speak is the rôle played by the ignorance of the patient and the point already made by Dr. Carstens and Dr. Kelly on the value of circularizing the public. I have had some little experience in trying to educate the public along medical lines, not only concerning cancer, but on general hygiene. In Maryland, we have an almost perfect system of public instruction in medical matters, carried on by means of public lectures, along the same lines followed out at the Harvard Medical School, also by a system of minor lectures to organizations of various kinds, and finally, in a rather novel way—by means of the newspapers. The two largest newspapers in the state have joined hands with us, and we issue a weekly "health bulletin" in which topics of interest to the public are discussed by authorities on these subjects. The articles are not signed, but are simply labeled as being issued under the auspices of the state medical organization. Week by week both newspapers publish identically the same articles, and they have done a great deal of good. Among other things, we have discussed cancer, and although we realize that the newspapers offer the best medium for reaching the public, we have also come to realize that we cannot do as much with the newspapers against cancer of the uterus as against other diseases. Newspapers which do not hesitate to publish advertisements of "female regulators," etc., assume a very bizarre modesty in discussing such subjects as cancer of the uterus in their reading matter. I think Dr. Kelly is right in saying that from the standpoint of cancer of the uterus we must for the present rely mostly on pamphlets. In this way we will educate the public and the public will educate the newspapers. We want to create first of all a good healthful public sentiment. People die of cancer because they do not realize the significance of the early symptoms. Ignorance is the fundamental obstacle in attacking the question of cancer, and we must save the people, not from their own folly, but from their own ignorance.

Dr. H. G. Wetherill, Denver: I want to call the attention of the Section to a little device which is very useful for other purposes and which Dr. Kelly's suggestion leads me to think might be applied to this particular use. The instrument is what is known as a "blender" in a pyrography outfit; a platinum point, such as is used in making burnt-wood pictures, having an opening in the end. A stream of hot air passes through the hole in the point and without touching the surface with the point the tissues may be cooked or cauterized to any desired degree. I see no reason why it should not work within the speculum as Dr. Kelly has suggested. We now know that primarily cancer is a local disease and that the successful treatment of cancer hinges on its early diagnosis. When we devise some means by which an early diagnosis may be made, then the results of the treatment of cancer may be improved. In the discussion on another paper the statement was made that there was no relation between fibroid tumors and carcinoma. We often find an association of fibroid tumors and carcinoma, but rarely find a true carcinoma originating in a uterine fibroid, and one sometimes sees uterine carcinoma which has not invaded an existing fibroid growth, but has skirted or circumscribed it. In some instances, however, fibroid tumors may cause carcinoma of the opposite wall of the uterus from pressure and irritation. We have that phase of fibroid tumors to think of in the consideration of this question.

Dr. H. J. Boldt, New York: The point has been this: All the talking that we do without some action is not going to be of benefit. I wish a committee might be appointed from this Section to formulate a set of resolutions in regard to the education of women concerning cancer. We will then get some results in the matter of early diagnosis. In the application of the galvanocautery a portable battery will not give a continuous heat sufficiently long, but if we have the direct or the alternating current, there is absolutely no trouble in getting enough heat. The prevention of burns has interested me very much. I have tried the different devices and find them all useless compared with the cooling speculum which I have shown. We may use any degree of heat and as long as desired without burning the vulva, or any part of the vagina on which we do not want the action of the heat. I have cauterized a large number of patients; furthermore, there is plenty of room to work through the speculum. The best form of treatment at the present time is enucleation with a sharp spoon, provided the disease has not advanced too far. Leopold has done considerable experimental work on animals, rats and mice; similar experimentation as is done in Buffalo. The important point is the early diagnosis. I hope some one will make a motion to the effect that the chairman appoint a committee from this Section to present resolutions to the main body, who shall communicate such resolutions to the public at large. The fact should be emphasized that cancer is not limited to any particular time of life. Women should be instructed to apply to their physicians at once on the first manifestation of any abnormal pelvic symptoms. Then if the physician does not feel himself competent, or if there is any question as to the diagnosis, he should endeavor to have some one help him in the case.

Dr. W. B. Chase, Brooklyn: I am entirely in accord with the sentiments expressed by Dr. Boldt and the others regarding prevention. Dr. Polak was mistaken in the fact that reference was not made to Dr. Byrne's thermocautery methods of treating cancer of the cervix. I believe that the pain of cauterization is far greater than the majority of physicians believe it to be. In fact, as I know, the pain is so great that it is very serious; whereas, the after influence of thermocautery is practically painless. If the cutaneous surfaces are not burnt the subsequent pain is practically *nil*. I congratulate the Section that evidences of cure of certain cases of carcinomatous disease of the uterus, even when the treatment is undertaken as palliative, are coming to our notice. It certainly ought to be encouraging to every one of us not to forsake a case simply because we believe it to be hopeless. We have struck the keynote of the whole situation when we ask that knowledge regarding early successful treatment be disseminated, not only among the profession, but among the laity, the sooner will the mortality diminish. While we are doing all we can to disseminate information, it behooves us as physicians and surgeons that we do not forget suffering womanhood, and that we continue as best we may to meet the indications for relief of these sufferers.

THE ANALGETIC EFFECT OF LOCAL APPLICATIONS OF SOLUTIONS OF MAGNESIUM SULPHATE AND OTHER SALTS

PRELIMINARY NOTE *

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In certain cases of cutaneous inflammation, arthritis, etc., in which I was led to make observations on the effects of external applications of magnesium sulphate, certain deep-seated pains independent of the particular affection of which a patient complained, apparently disappeared in sequence—I do not say in consequence, but in sequence—of the application. In order to test whether or not this was a psychic phenomenon, other applications were made—simple saline solution, distilled water, magnesium chlorid, sodium sulphate, etc.; and, while any moist dressing in these particular cases (I am not referring now to cases in general) seemed to diminish the pain somewhat, none of them had the same decided effect as the magnesium sulphate. The nearest in such power was sodium sulphate.

As to classes of cases: One was an aneurism. A man suffering from thoracic aneurism with projection of the chest wall had some slight cutaneous irritation over the mass—I have forgotten its cause. Application of magnesium sulphate solution was made. The relief to his deep pain was so great that he asked to have the dressing repeated after the irritation had subsided. This apparently was a psychic reaction; yet when the application was changed to sodium chlorid solution without the man's knowledge it failed to produce the same effect. But magnesium citrate likewise failed. The effect was not lasting and the application had to be repeated from time to time, and finally in this particular instance of aneurism it failed to have any further effect. Other cases in which this apparently reflex analgesia was observed were cases of gastric ulcer, gastric carcinoma, lymphatic leukemia, acute pericarditis, sciatica, headache of unknown origin, chronic pleurisy. In many instances it failed completely. To determine whether in any case there was any local anesthesia produced, tactile sense, pain sense, thermal sense, etc., were tested in normal persons, in the patients relieved by magnesium sulphate, and in the patients not relieved by it. In no instance was any effect of any kind on the cutaneous sensation detected, whether the examinations were made within ten minutes or after thirty minutes to an hour. I present this merely as a curiosity of observation. The measure may be useful at times when one does not care to give morphin in cases of deep-seated pains, acute or chronic.

The problem is complicated and the method of observation is inexact, so that I am not now prepared to say that there was a definite chemical or pharmacologic action of the magnesium sulphate in these cases. The matter seems, however, to be worth proving further.

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ABSTRACT OF DISCUSSION

Dr. Reid Hunt, Washington, D. C.: Dr. S. J. Meltzer, New York, did some experiments on animals in such a way that the psychic element could be completely *eliminated*. The remarkable results shown seem to be good reasons for believing that magnesium sulphate will relieve pain materially. Dr. Meltzer anesthetized a rabbit and while the animal was deeply anesthetized placed both ears in hot water for a very short time and then the right ear was treated with a strong solution of magnesium sulphate and the left ear with an isotonic solution of some other salt. Some little time afterward, the ear treated with magnesium sulphate was upright and seemed normal, the ear treated with salts of the same concentration was drooping and evidently not on the road to recovery. Later, the ear treated with magnesium sulphate was practically normal, only a few small ulcers being present; the other ear, treated with other salts had largely sloughed away. Dr. Meltzer suggested treating burns with magnesium sulphate. It has been used to some extent for burns of the first and second degree and has given much relief and evidently aided greatly in healing.

Dr. Theodore Potter, Indianapolis: Do the members of this Section use the solution of magnesium sulphate in erysipelas? It is coming to be talked about recently and in some localities is rapidly supplanting the application of various other medicaments like ichthyol. We run from one thing to another and at present we run toward sulphate of magnesium. I have used it in a few cases of erysipelas, perhaps it has done as much good as cold water, which thus far seems to do as much good as anything. It appears that this drug will supplant other things rapidly, such as ichthyol, once widely used, *and in which the profession has largely lost confidence.*

Dr. Solomon Solis Cohen, Philadelphia: I am, fortunately, or unfortunately, of that mental temperament which cannot always make an unqualified statement. I remember very well that my honored teacher of therapeutics used to be very positive concerning each particular drug that he was lecturing about, that it would "cure" many and various affections. All I am able to say of this or any drug is that it is useful under certain limitations. Magnesium sulphate, applied locally, in certain cases of erysipelas, is useful. But there are cases of intense, *rapidly spreading and erysipelatous inflammation,* with toxic systemic symptoms, in which I should be very reluctant to depend on the external application of Epsom salt as being all that medical science could do for the relief of the *patient. In mild cases of strictly localized erysipelas, without* much toxemia, a dressing of cold, saturated magnesium-sulphate solution, properly applied, seems to be about as useful as, and perhaps a little more useful than, anything else that I have used. It is not so dirty as ichthyol and seems to afford the patient a great deal of comfort. It relieves the burning especially. I don't know that it checks the spread of the local infection, but it does relieve, to a marked degree, the local distress. It may confidently be used for such purposes, but it should not be used for the things that it will not do. I may add that I sometimes say to my students, and I think it may be said to physicians, while an elephant cannot climb a tree, yet an elephant is a very useful animal for heavy draught purposes. So with our drugs. Magnesium sulphate in the case of erysipelas may climb a tree; but it is not to be depended on for heavy draught.

Physical Strain on Soldiers.—The British Army Annual for 1909 asserts that smartness of drill often causes unnecessary heart strain. "The position of attention is most injurious to the health of the soldier, and far too much of his time is passed in that attitude. The movements of respiration are seriously checked in the effort to keep the chest expanded. After a time the chest walls become more or less fixed in a position of expansion, and the range of expansion is permanently diminished. This condition greatly reduces the efficiency of the lungs, and thereby of the aeration of the blood, and is therefore a cause of disease and a lessened resistance to disease. A factor in causing heart strain in soldiers is excessive 'smartness' of the drill in certain regiments. Men are taught to move so promptly at the word of command that *they anticipate orders* with strained attention. This is harmful, and probably quite unnecessary." The annual urges that training should commence gradually and should never take place *before breakfast or for too long a time.* It is argued that it is not an advantage to train soldiers to be good acrobats or heavy weight lifters, and that training should be carried on with a *constant view to avoid strain on the heart.*

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* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909

THE CORRECTION OF DEPRESSED AND IRREGULAR DEFORMITIES OF THE NOSE BY MECHANICAL REPLACEMENT

WITH REPORT OF CASES TREATED BY THE AUTHOR'S COMBINED BRIDGE AND INTRANASAL SPLINT *

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A year ago I called attention to an apparatus designed for the purpose of bringing into proper position the several parts of a depressed nasal arch and holding them until union had occurred. Some months after my first presentation of this subject I learned of an apparatus used several years ago for the support of a depressed fracture of the nose by Dr. O. B. Douglas. Dr. Douglas' device consisted of a mask fitted over the nose and fastened around the head by a band; to this was attached a bar extending above the nose. Holes were bored in the nasal bones, and through these sutures were passed which were tied to this bar. This appliance differed from mine as much in its mechanics as it did in its technic of application, for it did not give the proper support to the base of the nasal triangle, an important feature of my instrument.

The chief object of this paper is to report the work done and the results obtained, and to suggest the further application of the apparatus to deformities other than those of depression.

My apology for using some illustrations that have appeared before is that they represent the fundamental principles on which the action of the instrument rests, and are necessary to make the text clear.

The bridge of the nose is a bony arch formed by the nasal bones and the nasal processes of the superior maxillæ. The extent to which the latter enter into its formation varies greatly in the skulls of different races and in those of the same race. In examining a large number of Caucasian skulls, I was much surprised to find that from one-half to three-fourths of the nasal elevation was due to the nasal processes of the superior maxillæ, and in some skulls the nasal bones formed only the crown of the arch. The extent to which these processes enter into the formation of the arch is a matter of considerable importance, as will be seen when we come to consider the restoration of a depressed bridge.

The nasal bones articulate with each other, the frontal bone, the superior maxillæ and the vertical plate of the ethmoid, while to the lower edges are attached the lateral cartilages. Traumatic deformities of the nose are due to dislocations at these connections and to fracture of the bones.

Any method of treatment for depressed deformity of the nasal bridge that ignores the mechanical principles of the arch does not rest on a scientific basis, and, therefore, can not produce uniform or satisfactory results. Each word in the definition of the arch carries with it practical significance to the surgeon. An arch is a structure built in a curved line in such a manner that it will retain its position when the structure is supported only at its two extremities. In making a practical application of this principle, we must assume that the arch is made up of an indefinite number of segments, on the proper position and mutual pressure of each one of which depends the integrity of the entire structure. If any of these elementary segments are destroyed or displaced, the segments next in line fall together and the arch is established on a new and lower level, or, if the injury has been very extensive, it may be destroyed altogether. Now, if the segments of bone forming the nasal arch are only displaced by the injury, it is possible that, after the thorough mobilization of the bony structures, the original nasal arch may be restored by applying an apparatus that will exert force along lines that would tend to construct a normal arch; the displaced segments are then drawn back into proper position. If there has been destruction of any of the bony segments, either from extensive injury or, as more frequently happens, from disease, we have a different proposition before us; in this case the piers of the arch (the nasal processes of the superior maxillæ) must be brought closer together narrowing the span of the arch and raising its crown; if this can not be done to the normal extent, our only recourse is the injection of paraffin to fill out the deficiency.

In enunciating the basic principles on which this method of treatment rests, no reference has been made to the septum. It is my belief, founded on an experience in over 300 submucous resections of the septum, that in the adult the septum, as a vertical support, takes no part in the preservation of the nasal arch. It must not be forgotten, however, that the upper edge of the septum, wedged in between the lateral cartilages, is one of the segments of the arch and performs the important function of the keystone, and its displacement means the destruction of the arch.

Many of the methods in vogue for the treatment of fractures of the nose and for the correction of depressed deformities have not been based on proper mechanical principles; in fact, the laws of mechanics have been altogether disregarded. It is unnecessary to refer to the various means that have been proposed for meeting the conditions; suffice it to say that nearly all exert pressure in one direction only, and, if counterpressure has been applied at all, there has been no combined action between the two and the results have been neither uniform nor satisfactory either from a cosmetic or functional point of view.

The custom prevalent, especially among general surgeons, of placing straps of adhesive plaster across the nose and splints within the nasal cavities in cases of recent fractures, is to be condemned, for not only is the flattening increased by pressure of the straps, but the nasal chambers are broadened by the splints. Both influences tend to produce a flat nose.

It is mechanically impossible for any form of splint, packing, or intranasal appliance to raise or even to support a depressed bridge, for, according to measurements which I made on a large number of cadavers, the roof of the nose, if prolonged downward and forward, would meet the level of the floor at an angle of 70 degrees, while the vertical diameter of the nasal orifice is only three-eighths of the distance from the center of the nasal bone to the floor of the nose. It can be seen at once, therefore, that any intranasal appliance depending on the floor for support would immediately be propelled toward the choanæ by the inclination of the dorsal plain.

It is only by applying a combination of these two forces, one acting from within the nose at its apex and

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* Read in the Section on Laryngology and Otology of the American Medical Association, Atlantic City, June, 1909. This article is here abbreviated by the omission of several pictures taken from casts of deformed noses. These pictures appear in the Transactions of the Section, and in the author's reprints.

the other from the outside at the base, that the former symmetry of a flattened nasal arch can be restored.

A careful study of the forces employed by Nature in the development of the flattened nose of the infant suggested the following apparatus, which is intended to duplicate these forces. The apparatus, shown in Figure 1, which has been made familiar to many rhinologists by a former presentation, consists of a fenestrated steel bridge, the wings of which are connected by a hinge, and the distance to which they can be separated is regulated by a thumb-screw. The edges of the wings are padded with rubber, and the small holes near the edges permit of gauze padding being stitched on. The second part of the instrument consists of two small hard-rubber splints perforated by four small holes.

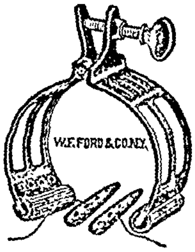

Fig. 1.—Bridge and intranasal splint for correcting depressed deformities of the nose.

The application of the apparatus is as follows, assuming that there is a recent depressed fracture, or, in the case of an old deformity, that the tissues have been thoroughly mobilized by a previous operation to be described later: No. 14 iron-dyed silk is passed through one of the holes in the hard-rubber splint and knotted; the other end is threaded into a large curved needle; this is passed from within the nose through the cartilaginous dorsum just below its attachment to the nasal bones. This process is repeated on the opposite side. The bridge is then applied and the wings adjusted with the thumb-screw to give the proper support to the base of the nasal triangle. The sutures are then run through the fenestræ in the bridge, corresponding vertically to their exit from the nose and drawn tight enough to lift the dorsum into its proper position. The sutures are then tied together over the hinge. There should only be sufficient tension to support the bridge. The diagram (Fig. 2) shows the bridge and splint in position. The splint rests partly under the nasal bone and partly under the cartilaginous dorsum. The resultant of pressure and counter-pressure keeps the apparatus in position; it should be worn for ten days or two weeks.

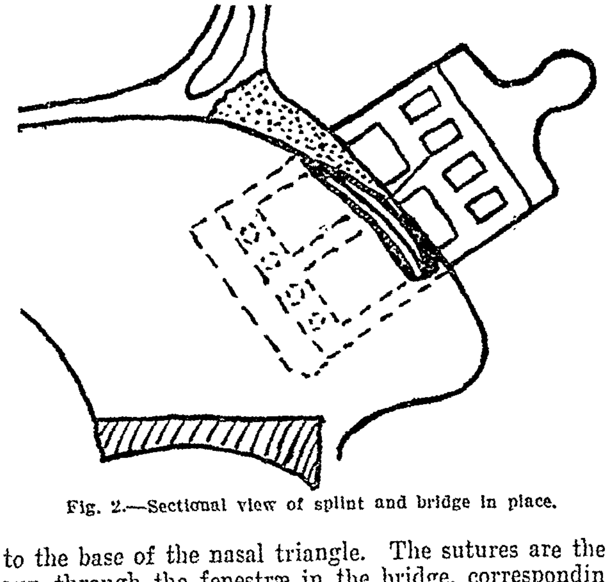

Fig. 2.—Sectional view of splint and bridge in place.

On account of middle-ear complications in two cases, I have ceased using the spray and douche in the after-treatment as previously advised. I now clean out the nasal cavities each day with pledgets of cotton soaked in Dobell's solution and then introduce a small quantity of petrolatum. The wings of the bridge should be carefully padded and the skin where these rest should be bathed each day with alcohol and should be watched for evidences of too great pressure.

The respiratory function of the nose is not interfered with after the first two or three days, and the patients do not complain of great discomfort while wearing the apparatus. It is better for the patient to remain in bed during the treatment, but if the bridge is anchored to the forehead with adhesive plaster he may sit up.

According to Treves, in uncomplicated fractures of the nose, there is fixation in eight days and bony union in two weeks.

The mechanics of the apparatus is shown in the diagram (Fig. 3). A represents the downward pressure applied to the base of the nasal triangle and is produced by the tension of the sutures passing through the dorsum of the nose; B shows the horizontal pressure under the control of the thumb-screw. The resultant force—that actually applied at the base—is represented by a line, C, bisecting the angle formed by A and B, and is the proper direction to support the base of the nasal triangle. A combination of this downward and inward pressure applied at the base and the balancing upward pull at the apex of the nasal triangle when applied to a nose in which the bony framework has been mobilized will tend to construct a normal symmetrical organ. This I have demonstrated on the cadaver as well as on the living subject.

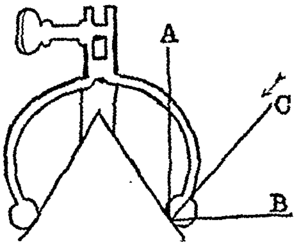

Fig. 3.—Illustrating the mechanics of the intranasal splint and bridge.

External deformities of the nose to which this method of treatment may be considered applicable may be classified as (1) congenital, (2) deformity due to disease, (3) traumatic.

The extent to which those included in the first two subdivisions, that is the congenital cases and those in which deformity is due to disease, can be benefited by this method of treatment depends on the amount of healthy bony framework available for reconstructive purposes. This is always deficient; hence in these cases perfect results are not to be expected without the aid of paraffin.

Traumatic deformities may be divided into (1) recent fractures, (2) deformities resulting from old fractures, (3) habit deformities. The latter consist in deflection of the entire nose to one side, caused by the long-continued effort of the patient to relieve an obstructed nostril by pressing the nose to one side.

In simple recent fractures in which one or possibly both nasal bones are broken and slightly displaced, the fracture can frequently be set by manipulation and a good result obtained without the use of any apparatus. But when the nasal bones tend to separate and in severe cases in which the nasal bones, the nasal processes of the superior maxillæ and the cartilaginous and bony septum are fractured and perhaps comminuted, the basic supports of the nasal arch have been destroyed and an apparatus is needed to hold the parts in proper position during the process of repair. Such cases present ideal conditions for the use of the combined bridge and splints. As soon as the swelling subsides after the injury, the broken parts should be carefully placed in position. The Adams forceps, the handle of a knife, a periosteum elevator may all be found useful in accomplishing this. Particular attention should be paid to the septum, for this is practically always fractured, and the disagreeable features arising from its permanent displacement are familiar to all.

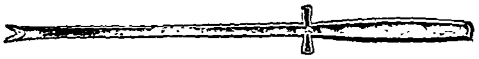

Fig. 4.—Carter's chisel for the nasal processes of the superior maxillæ.

After the apparatus has been applied, the nose should appear normal in shape and it should be retained so until union has occurred.

In old traumatic deformities it is necessary to mobilize thoroughly all the tissues, and, in addition, if the nose is very flat, and there has been loss of tissue, it is frequently necessary to utilize a portion of the nasal processes of the superior maxillæ. A narrow chisel of special design (Fig. 4) is placed against the anterior edge of the nasal process of the superior maxilla and driven upward; the progress of the chisel can be watched by placing the finger on the side of the nose—care should be taken not to go through the skin. When the chisel has been fairly engaged, the strip of bone can be broken off by turning the chisel from side to side. There is little or no danger of splitting the bone into the lachrymal canal, for, as shown by Berens, the grain of the bone runs away from the canal. I found by measurements made on a large number of skulls that the lachrymal canal is about five-eighths of an inch behind the anterior border of the nasal process of the superior maxilla; this places it beyond the danger zone in the normal skull.

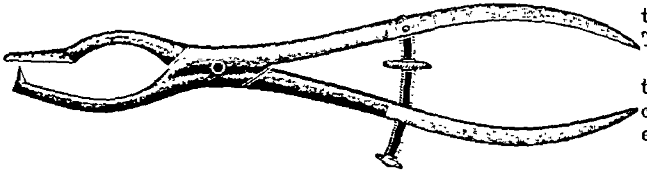

Fig. 5.—Carter's chisel-forceps for cutting through the nasal bones.

Further mobilization of the tissues is accomplished with the Adams forceps (Fig. 6) by placing one blade inside the nose and the other covered with rubber tubing on the outside. The septum is then grasped between the blades and mobilized. A specially devised chisel forceps (Fig. 5) I have found very useful in cutting through the nasal bones near their articulation with the frontal bone. The chisel blade is introduced into the nose up to the desired point, the outside flat blade being covered with rubber tubing and the set-screw carefully regulated so that the chisel will not cut through the skin. In cases in which the septum is badly deformed, a submucous operation should be done a day or two before the bridge splint procedure. When the nose is very flat and the shortened septum is holding down the dorsum, I make an oblique incision through the septum, beginning at a lower level and emerging in the opposite nasal chamber near its roof. This permits the upper segment to be raised without leaving a perforation and is a substitute for the sliding flap operation I suggested last year.

Where there is a step-like deformity caused by luxation of the lateral cartilages at the point of attachment to the ends of the nasal bones, before applying the bridge, I make an incision from within through both lateral cartilages and the septal cartilage along the line of depression with a Myles rectangular septal knife. This enables me to lift the cartilaginous portion of the dorsum into line with the bony portion of the bridge.

The following cases which demonstrate the various circumstances under which the appliance may be found useful are from private practice and from Dr. Harmon Smith's clinic at the Manhattan Eye, Ear and Throat Hospital:

Case 1.—This is reported for the second time to show present condition.

Patient.—An amateur athlete fell from a horse three years ago, striking on his nose. Following the injury the nose was flat and he was unable to breathe through it. The septum was thick, irregular and obstructing. The nasal bones over-rode the nasal processes of the superior maxillæ; the lateral cartilages were displaced backward at the junction with the lower edges of the nasal bones.

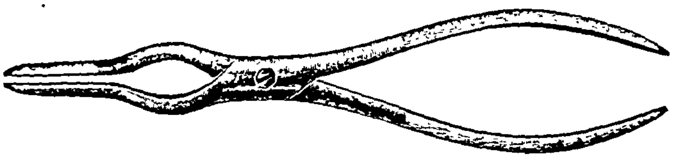

Fig. 6.—Adams' forceps.

Operation.—On Jan. 23, 1908, a submucous resection of the septum was done; two days later the tissues were mobilized and the bridge splint applied. In this case the cartilages of the dorsum had to be lifted in the manner previously indicated. The immediate result was very good.

Present Condition.—There is a slight step-like depression at the juncture of the nasal bones with the lateral cartilages. The contour of the nose is fairly good; the intranasal condition is excellent. Time since operation, 14 months.

Case 2.—This also is reported for the second time to show present condition.

Patient.—Man, aged 24, no venereal history; he has had atrophic rhinitis since early childhood. The nose is broad and flat, almost on a level with the cheeks. Nasal chambers are roomy and covered with crusts. He was treated with daily irrigation of saline solution and massage with 25 per cent. argyrol solution three times a week for six months.

Operation.—In March, 1908, I lengthened the septum by a sliding flap operation and raised the tip and modified the size and shape of the nostrils by an inverted Y-shaped incision (both procedures have been previously described). Before applying the bridge, pieces were chipped from the superior maxillæ to be used in building up the arch.

Present Condition.—Eight months after the operation, elevation of the bridge was only fair; the tip raised and the nostrils were of much better shape. The septum was perforated, the nasal chambers were much smaller and the atrophic rhinitis was greatly improved. Thirteen months after the operation the external appearance of the nose was the same; the atrophic rhinitis was almost gone. The health of the patient was greatly improved.

Remarks.—The bridge in this case is still depressed, but is higher than it was before the operation. This operation was not altogether a success, due to deficiency of tissue with which to build up the arch.

Case 3.—A boy fell on his nose, fracturing it on Sept. 5, 1908.

Examination.—Two days after the injury, the nose was swollen and discolored; a ragged cut extended across the bridge through which the nasal bones could be felt with a probe. The nasal chambers were completely obstructed.

Operation.—Under ether, the fractured nasal bones were found protruding into the nasal chambers. The septum and left nasal process of the superior maxilla were also fractured. The parts were simply adjusted and the bridge splint applied.

Result.—The result in this case was excellent, both as to function and cosmetic effect. The boy tells me that he can breathe through his nose better than before the injury. These good results have continued up to the present time, five months after the operation.

Case 4.—A boy, aged 14, had his nose broken in May, 1908.

Examination.—There was a step-like depression at the point of junction of the nasal bones with the lateral cartilages and considerable over-riding of the nasal bones over the nasal processes of the superior maxillæ, especially on the left side, where there was a large bony protuberance. The nasal chambers were almost obstructed by a thick, irregular septum.

Operation and Result.—In July, I did a submucous resection of the septum, and in October the bridge splint was applied. In this case the septum had to be lengthened. The result was excellent and has remained so up to the present time. The nasal stenosis is completely relieved.

Case 5.—A young man, aged 25, was thrown from his horse on Nov. 28, 1908. He fell on his nose, sustaining the following injuries, case seen four days after the accident: The nasal bones were fractured and separated and over-riding the nasal processes of the superior maxillæ; the septum was fractured. Operation was done Dec. 3, 1908. The result both from a cosmetic and functional point of view was excellent.

Case 6.—A boy, aged 14, was kicked in the nose by a horse on Sept. 16, 1908. He was treated by a local surgeon, who put splints in the nose and fastened strips of adhesive plaster across the bridge.

Examination.—I saw him for the first time four months after the injury. There was a complete saddle-back deformity. On the nasal bridge was a large scar, and a cicatricial band connected the right ala with the cheek. Both nasal cavities were obstructed by an irregular, thick septum.

Operation.—A submucous operation was done and four days later the bridge splint was applied. There was very little bony tissue left to build upon, as the injury was a severe one and some bone had sloughed out. The cicatrix was removed and the bare surface was skin-grafted.

Result.—The result a month after the operation was very imperfect from a cosmetic point of view, though the nasal cavities were perfectly clear and open. I then made a small incision through the original scar, dissected up the scar tissue and skin and injected about thirty drops of paraffin. The present appearance of the patient is greatly improved (due chiefly to the paraffin injected), and he has a good breathing space.

Case 7.—This was a traumatic deformity of ten years standing in a man of 22. There was no depression, but the entire nose was displaced to the left and the right nostril was obstructed.

Operation and Result.—On January 12, a submucous resection of the septum was done and four days later the nasal tissues were mobilized and the bridge splint applied. The result is perfectly satisfactory, the nose is straight and the nasal passages are unobstructed.

Case 8.—A Jewess, aged 18, fell on her nose eleven years ago, fracturing it. She had a pronounced hump on the dorsum, and the entire nose was displaced to the right. The left nostril was obstructed by a deflected septum.

Operation and Result.—A submucous resection of the septum was done on November 20, and the bridge splint operation on November 28. The hump was subsequently removed through a small incision over the dorsum. The result is very satisfactory, the nose is symmetrical and the nasal obstruction is relieved.

CONCLUSIONS

My experience with this method of treatment for deformities of the nose leads to the following conclusions:

1. Cases in which there has been loss of the bony framework of the nose, either from disease or extensive traumatism, are not suitable for this operation.
2. In recent fractures and old traumatic deformities when the tissues have been properly mobilized, this method should yield good results.
3. After a lateral deformity or displacement of the entire nose has been reduced by operation the apparatus should be worn as a retaining splint. For the elasticity of the skin and soft parts tends to restore the former malposition of the organ if it is not so restrained.
4. The passage of sutures from within the nose through the dorsum does not complicate the case.
5. This method of treatment corrects the deformity by reversing the direction of the forces that produced it. It also relieves the intranasal deformity, which we know tends to increase with age and eventually becomes the predominant feature in the case.

69 West Fiftieth Street.

ABSTRACT OF DISCUSSION

Dr. J. O. Roe, Rochester: In recent fractures, I consider Dr. Carter's plan excellent, but in cases of a distorted nose from an old fracture, where a definite amount of osseous tissue has been thrown out and where there is very much thickening of the parts, making the nose much more firm than it was before, the plan which I have adopted in these cases, it seems to me, gives better results than could be obtained by Dr. Carter's fracturing and suspension method. When there is a fracture of the nose, there is displacement of the nasal bones downward and outward, so that there is a flattening of the top of the nose, with a corresponding bulging at the sides. If the top of the nose is lifted according to Dr. Carter's plan, you must, in order to re-establish the normal outline, have as a result a much larger nose, for the reason that the base of the nose is very much wider than before the injury. Even by his plan of completely mobilizing or severing the bones with his chisel, it would be difficult to stretch them out or get them back to their normal position. Another drawback I should think he would encounter is the raising of the top of the nose from the septum, which has also been knocked down and the top line made much lower. It is true, as he has stated, that the arches of the nose form the main support and that the septum has little to do with holding up the bridge, but in liberating the nasal arch from the septum and raising it up and, of course, holding it there until ossification of these bones in their new position has taken place, the septum would stand up as a partition, unattached except at the bottom and ends. Several years ago I attempted to treat some of these cases in this manner by refracturing the bones, somewhat according to Dr. Carter's plan, and supporting them from the inside. One method that I adopted was to use a bridge, somewhat similar to Dr. Carter's and inserting one of the arms of a U-shaped piece of steel and pulling upward on the outer arm at the point opposite to which I wished the pressure on the inside of the nose and which portion I covered with rubber tubing. Another plan that I adopted was to introduce both arms of a jointed triangle into the nose and forcibly separate them by means of a screw, using the floor of the nose for the fulcrum, and having the upper arm bent in the required shape to give the necessary support at the spot desired. As neither of these plans gave satisfactory results, I, of course, never reported them. The plan that I then adopted and which has given me most excellent results is as follows: I make a subcutaneous resection of this displaced bony tissue and by raising the soft tissue from the top of the nose so as to make a place for this resected portion on the top of the bone, thus filling in the depressed portion. In other words, I take the tissue from the place where it is not wanted and place it in the depressed portion, where it is needed, thereby making a symmetrical nose.

The plan that Dr. Carter suggests for raising the tip of the nose, where the lateral cartilages are flattened and bulging outward, by stitching them together so as to draw their bases in, can not fail to be of service in some cases. In the correction of nasal deformities, however, we meet with such an infinite variety of conditions that the plan which works well in one case will not do at all in another, even though the conditions may seem to be quite similar. Every method has its advantages in certain cases, but the conditions of the case must be studied with a view to ascertaining how and in what manner the deformity can be best corrected, rather than to consider the adoption of any one method for all cases. It is therefore only by varying the different methods to meet the requirements of different cases that we can hope for uniformly successful results.

DR. C. F. WELTY, San Francisco: I have operated on one patient in this way and am sorry to say my results were not perfect, although the man was very much improved. He had a very severe extensive traumatic injury, having been thrown against a street car. I have not tried Dr. Roe's plan, but apparently that would work also. Two or three years ago, I transplanted a piece of bone for saddle nose and had better results with that than I did with this apparatus and three years after that transplantation the patient's nose was in perfect condition. I believe, however, that the Carter splint is a splendid method.

DR. R. H. GOOD, Chicago: I have used Dr. Carter's splint with excellent results in a case of marked deformity in which the nose was pushed to one side. I have the pictures both before and after operation. There were several complications which perhaps might have been prevented. For instance, there was sloughing of the cheeks from pressure, which I think could be avoided by having the parts which rest on the superior maxilla flat. Another complication was stitch infection. I used silkworm gut; perhaps if I had used silver it would have been better. I found that the intranasal splint was a little too large for my case, the patient being only 15 years old. The result, however, was very good.

DR. W. W. CARTER, New York: Dr. Roe states that when the bridge of the broad, flat nose is raised the nose will be too large. Now if this were the case I would have to make tissue; for it requires more tissue to elevate a nose and at the same time retain its original breadth, but it does not require more tissue to elevate a nose if we make its base narrower. This is what is accomplished by this method: the excess in breadth of the nose is added to its height by narrowing the base of the nasal triangle by means of the adjustable wings of the bridge. While I do not claim to have obtained perfect results, still I hope that I have succeeded in impressing you favorably with what can be done for a class of patients for which so little has been accomplished in the past. I believe that the instrument is constructed on proper mechanical lines and that by means of it force can be so applied as to construct a normal nose, provided that there is enough bony framework left with which to work.

The sloughing referred to by Dr. Good will not occur if a proper amount of gauze padding is used on the wings, and if the skin under these is bathed each day with alcohol. Then, too, in applying the instrument too much tension must not be employed. I find that silk is the best suture; it is more easily tied and untied, and by capillary attraction it sustains drainage to a great extent. I have had no trouble with stitch abscess. A certain amount of pus always forms around the stitch, but I keep it washed away with boric-acid solution.

No two noses that I have operated on yet have been of the same size or shape, so I seldom use the intranasal splint that comes with the bridge. I usually make them of guttapercha at the time of the operation and mould them to suit each case. Several men have asked me if there is not danger of injuring the turbinate bodies while we are chiseling off the nasal processes of the superior maxillæ: in reply I will say that we are working on a plane anterior to these bodies and do not come anywhere near them.

The Criminally Insane.—Dr. James J. Walsh, New York, favors perpetual confinement of the criminally insane. He holds it absurd that a man may have an attack of mental insaneness that will lead him to take human life, and then be expected to get over his mental condition so as not to be likely to do the same thing again.

VASECTOMY AS A MEANS OF PREVENTING PROCREATION IN DEFECTIVES *

HARRY C. SHARP, M.D.
INDIANAPOLIS

The general public is rapidly coming to realize that our public dependents are largely recruited from the defective classes, and that but comparatively few persons become a public charge as the result of disease or adversity.

Neurologists recognize a so-called predisposition to insanity, which in fact is an inherited defect, or perhaps, more correctly speaking, defects, as there are usually several defective conditions in the mental and nervous organization, and frequently very pronounced physical stigmata.

Sanger Brown says, in speaking of this predisposition, that the phenomena which this condition presents may be readily accounted for by assuming a defect or defects in the neurons (the cell units of which the nervous system is composed) of such a nature that stimuli from environment may not reach the neurons of the cortex, or, having done so, the impression made there may not be sufficiently deep and lasting, or, in other words, well elaborated. Keeping in mind this condition of neuronal defects, it is easy to understand how certain individuals fail to respond to educational influences, moral or intellectual, or both.

That Sanger Brown is correct there is no doubt; and it is equally true that the same condition accounts for the large majority of cases of inebriety, pauperism, crime and drug habit. While defectives fail to respond to moral or intellectual influences, there is another fact that figures very largely, especially in the criminal class. It is that the centers of self-restraint are most defective. These persons may have full knowledge of the nature of their offenses and may fully comprehend that these offenses are morally wrong; still they have not the will-power to resist the impulse to commit a wrongful act when the opportunity presents itself. It is possible that such an individual, who would commit a crime under certain conditions, would be the first to reach the mourners' bench at a Methodist revival. He is as a ship at sea without a rudder, wafted about and changing his course with each variation of wind, all being well if the sea is calm and the weather fair; but a disastrous shipwreck is imminent in the event of a storm.

It does not necessarily follow that a defective person is to become a public charge, for included within this class are to be found the most gifted as well as the most vicious, weakest, and ordinarily, the most unhappy of mankind. Chatterton, Goldsmith, Coleridge and Charles Lamb are but a few instances of the class of gifted defectives. Invention, music and art are sometimes of high order among these persons, but desultory, half-finished work is decidedly more common. Concentrated effort is often impossible to such persons. Executive or business faculty and judgment are seldom developed.

Persons of this character who appear on life's stage and play their part contribute much to the world's beauty and pleasure. They fill a place in history, though history often fails to mention the legacy they leave to succeeding generations in the way of defective children, which become a misery to themselves and a charge on society.

There is no disputing the fact that mental as well as physical defects are transmitted to the offspring. If a defective marries a normal person, frequently the departure from the normal is much less marked in the offspring than it was in the parent, while, on the other hand, if two defective persons marry their children inherit the stigmata of both mother and father, thus becoming a more defective type than either parent.

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*Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

Naturally the tendency is for the abnormal to mate with their kind—to seeking their own level; then, too, one of this type seldom finds a normal person who would be attracted to him. This condition favors the rapid increase of the number of defectives as well as the accentuation of the type. This class of individuals is very prolific, from the fact that in the matter of sexuality, as in everything else, they know of no self-restraint. They indulge their selfish lust, ad libitum, with no thought whatsoever as to what the result may be; they absolutely refuse to take into consideration their own ability to take care of their offspring. They simply know that they want gratification, and gratification they are going to have.

This is the condition at the present time, and will continue to be so long as this class is permitted to remain fertile.

In addition to the foregoing causes for the rapid increase of defectives, we find that the ranks are being contributed to by persons suffering of some mental, nervous or physical disease or exhaustion, begetting children while suffering from one or more of the above-mentioned conditions. Nature punishes those who violate her laws, and the punishment is visited unto the third and fourth generation. It is very possible that the children of physically exhausted or mentally disturbed parents will manifest a degree of defectiveness.

The children of syphilitics are almost sure to be defectives. Alcoholism, drug habits, immoral excesses are some of the common causes of mental and nervous exhaustion that render a person incapable of begetting normal children. Overwork and many physical maladies which produce in the sufferer a profound mental depression are frequently responsible for defective offspring. Thus it is that we frequently find that the children of ministers, lawyers, doctors and other professional and highly respected business men have pronouncedly disorganized minds, manifesting the same by immoral, criminal or insane acts.

Prenatal impression plays its part in the production of defectives.

Many of you know or have seen physical deformities as a result of profound mental impression during the period of gestation. As the mental faculties are much more highly organized, they are a great deal more susceptible to such impressions. Hence mental markings are more frequent than physical ones. It is very probable that a child of a woman under a mental strain during this period will show some evidence of nervous disorder early in life, and, if not carefully cared for during the critical periods of development, will be the subject of an outburst that will establish it as an abnormal being, beyond the peradventure of doubt.

Several years since a woman who was the mother of a boy at that time serving a sentence in a penal institution told me that during the time she was carrying the boy a man holding a mortgage on her property, taking advantage of her inability to settle the same at the time of maturity, forced a foreclosure, and it excited in her an intense hatred for this creditor. She could think of nothing save his physical repulsiveness and the unprincipled manner in which he had treated her. He was a homely man with very red hair, and she looked on him as a thief and a scoundrel, having robbed her of her equitable right. When this boy was born he had red hair, notwithstanding there was no such thing known in any of his ancestors, and he had always been apparently criminally inclined, although of a respectable lineage. This was undoubtedly the result of a prenatal impression.

The decidedly defective individual is very easily recognized, as the mental abnormality is usually accompanied with prominent physical defects, described by Lombroso, Wiesmann and others as morphologic stigmata. There are quite a number of these stigmata which indicate with considerable certainty the extent and nature of the mental defect. I shall not dwell on the various physical abnormalities that are found in the defective. I do wish, however, to call attention to the two that are found most frequently and the least dwelt on by writers on this subject, namely, imperfect refraction and color-blindness. It is very rare that we find a defective who does not have one or the other of the above-named conditions, though possibly to so slight a degree that the defect may be entirely overlooked. There are persons of this class in whom the only indications are temperamental, the most common being selfishness, ingratitude, inconstancy, egotism, inability to resist an impulse or a desire.

The disposition to permit all classes to procreate without restriction has brought about a condition shown by statistics, the study of which will prove very interesting.

Taking Indiana for the past eighteen years we find the following:

In 1890 the cost of maintaining the inmates in the state institutions, county poor asylum and orphans' homes was $1,201,461.24, while in the year of 1908 the cost was $2,443,140.55, or an increase of $1,241,679.31, which is considerably over 100 per cent. This is for maintenance alone, as none of the appropriations for the purchase of additional property, erecting new buildings or permanent improvements are included in this estimate. Nor is the cost of maintenance of county jails or workhouses included, as I was unable to procure accurate data for this period. But I did learn that in the year 1892 there were 600 jail inmates, as against 1,275 for the year of 1908.

In 1890 there were 8,670 inmates confined in state institutions and asylums for the poor; in 1908 there were 14,398, an increase of 5,728. This relates to such state institutions as those for the insane and feeble-minded, reformatory and penal institutions, poor asylums and Soldiers' and Sailors' Orphans' Home. It does not show the total increase, as the Soldiers' and Sailors' Orphans' Home, which is an institution that in no way should be considered as an institution for the care of defectives, shows a material falling off in its population, while the school for feeble-minded youths, whose entire population consists of the most pronounced defective class, shows an increase from 358 in 1890 to a population of 1,054 in 1908, an actual increase of 696, or over *172 per cent. in the course of eighteen years.* The asylums for the poor do not show anything like such an increase. But these abodes, like the soldiers' and sailors' orphans' homes, hold many persons who are there as the result of adversity and not degeneracy.

Beginning with the Soldiers' and Sailors' Orphans' Home, whose population is made up almost entirely of normal persons and which shows a decrease in population, on up through the county poor asylums, county orphans' homes, prisons, insane hospitals, epileptic village, and institutions for the feeble-minded, each institution shows an increasing percentage in proportion to the extent that it depends on defectives for its population.

In view of the above-described conditions, it seems to me it is race degeneration and not race suicide that should fill us with apprehension. History teaches that the fall of powers and principalities in the past has been due to the weakness of the people and not to the scarcity in numbers. Shall we follow the example of past ages or shall we learn from them a lesson and profit thereby?

Herbert Spencer says that to be a good animal is the first requisite to success in life, and to be a nation of good animals is the first condition to national prosperity. We may become a nation of good animals if we direct the same intelligence to the breeding of human beings that we do to the improvement of the breed of our domestic animals.

Restricting propagation seems to be universally agreed on as necessary for the relief of the downward tendency. The difficulty lies in deciding on the proper method to bring about this restriction. Some have advocated the education of public opinion so that those who are from defective parentage shall, in the face of such public opinion, abstain from marriage. This seems to me even worse than absurd, for I believe that we shall never be able thus to prevent the sexual intercourse; while there might be fewer marriages there would be more bastards.

Restrictive legislation has been advocated and many states have passed restrictive marriage laws. Minnesota has a law providing that within the bounds of the state no marriage shall be permitted either party to which is epileptic, imbecile, feeble-minded or afflicted with insanity, unless the woman be over 45.

Michigan, Delaware, Connecticut, Indiana, New Jersey and North Dakota have also passed laws for the purpose of preventing marriage among defectives, but unfortunately matrimony is not necessary to propagation, and the tendency of these several laws is to restrict procreation only among the more moral and intelligent class, while the most undesirable class goes on reproducing its kind, the only difference being that illegitimacy is added to degeneracy, and thus the children enter on life's battle doubly handicapped.

Dr. R. W. Bruce Smith of Toronto asks:

> What avails the continuous increase of hospitals, asylums, and similar institutions if the number to occupy them grows faster than the accommodations? How can we possibly leave the world better for our work if we do not, at least, begin some action to stop this vicious stream at its fountain-head? . . . Those who have faithfully and patiently wrestled with this perplexing problem have concluded that the only course to be taken is to separate all true degenerates from society and keep them by themselves in carefully classified groups, under circumstances which will insure that they shall do as little harm to themselves and their fellows as possible, and that they shall not entail on the next generation the burden which the present one has borne.

This method of segregation would necessitate the expenditure of enormous sums of money to establish and maintain colonies or industrial refuges which, I believe, would be a disappointment in the end. The colonists would necessarily live under restraint and, unless guarded like actual prisoners, many would escape. In their effort to escape detection these unfortunates would naturally realize that they could not engage in legitimate trade, and therefore would resort to crime, becoming a further menace to society. This plan, moreover, means life imprisonment for a large army of men and women who should be given the opportunity to enjoy life and liberty.

Castration is another means that has been suggested for the purpose of preventing procreation in the unfit. A superintendent of a Kansas institution for the feeble-minded thus operated on forty-eight boys in that institution about the year 1898. He has since severed his connection with the institution and if there has been any further report of his work I know nothing of it. This operation is, as I have repeatedly stated, of too much gravity and causes entirely too much mental and nervous disturbance ever to become popular or justifiable as a medical measure; but I heartily endorse it as an additional punishment in certain offenses.

It can readily be seen that one subjected to castration would in all probability become very morose and downcast on account of the deformity alone. Besides, the testicle has a double function, that of providing an internal as well as an external secretion, and the organism cannot maintain a normal condition when robbed of this internal secretion. This is manifested by the perceptible change in the eunuch.

Since October, 1899, I have been performing an operation known as vasectomy, which consists of ligating and resecting a small portion of the vas deferens. This operation is very simple and easy to perform. I do it without administering an anesthetic either general or local. It requires about three minutes' time to perform the operation and the subject returns to his work immediately, suffering no inconvenience, and is in no way hampered in his pursuit of life, liberty and happiness, but is effectively sterilized. I have been doing this operation for over nine years. I have 456 cases that have afforded splendid opportunity for postoperative observation and I have never seen any unfavorable symptoms. There is no atrophy of the testicle, no cystic degeneration, no disturbed mental or nervous condition following, but, on the contrary, the patient becomes of a more sunny disposition, brighter of intellect, ceases excessive masturbation, and advises his fellows to submit to the operation for their own good. And this is the point in which this method of preventing procreation is so infinitely superior to all others proposed—that it is endorsed by the persons subjected to it. All the other methods proposed place restrictions and, therefore, punishment on the subject; this method absolutely does not. There is no expense to the state, no sorrow or shame to the friends of the individual, as there is bound to be in the carrying out of the segregation idea.

There is a law providing for the sterilization of defectives in effect in Indiana and it is being carried out at the Indiana reformatory. I regret very much that it is not being followed up in the other institutions of the state; but there is no doubt that it will come about in a very short time.

Brown-Séquard, one of the earliest observers of the effect of the secretions of the reproductive glands, said that an extract from the fresh testis, when injected under the skin or into the blood current, had a remarkable influence on the nervous system, mental and physical vigor; that the activity of the spinal centers were greatly improved, not only in cases of general prostration and neurasthenia, but also in the case of the aged. Brown-Séquard maintained that the general dynamogenic effect was due to some unknown substance formed in the testicle and subsequently passed into the blood. Although many of the more recent investigators as Poehl, Zath and others assert that it is found in the external secretion, my own observations lead me to indorse the opinion of the latter.

After observing nearly 500 males in whom I had severed the vas deferens I am prepared to state that there is not only a diminution of the muscular and nervous fatigue resulting from muscular exertion, but also a lessening of fatigue sensation and a decided increase of energy and well being. I have observed splendid results in cases of neurasthenia.

That severing the vas deferens or the oviduct does not arrest the sexual development has been proved by doing the operation on young animals before they reached the period of puberty. That there is no atrophy or cystic degeneration has been satisfactorily demonstrated by ten years' observation. It was on account of these facts that I suggested that the vas deferens in the male and the oviduct in the female be severed as a means of preventing procreation in defectives, as the operation has no deleterious effect on the subject, but the contrary. The operation in no way endangers life.

After cleansing the scrotum with soap and water I bathe the part in alcohol, then grasp the spermatic cord between the thumb and the index-finger of the left hand, detect the vas, hold it firmly and fix it with a pair of bullet forceps, then cut down on it, draw it through the scrotal wound by means of a Tenaculum hook, strip it of all membranes and the accompanying artery, ligate above and sever, cutting away any portion from the vas that may have been damaged in the manipulation. This is done in order that the end next to the testicle may not become closed. It is very important that it shall remain open, in order that the secretion of the testicle may be emptied around the vessels of the pampiniform plexus and there absorbed, for it is through this process that the economy receives the tonic effect of the secretion; also where the end closes there is likely to be cystic degeneration. The action of the muscle closes the skin wound and no stitch, collodion or adhesive plaster is needed. The patient returns to his work immediately and suffers but little inconvenience.

There is no diminution of the sexual power or pleasure. The discharge at orgasm is but slightly decreased.

The operation in the female is more difficult, but, if skilfully done, no more hazardous. The oviduct is reached through a median incision, the tube ligated near the uterus and severed beyond the ligature.

There are over 300 girls in the institution for the feeble-minded in Indiana who, if treated in this manner, would be able to leave the institution and be self-supporting, as the only reason for detention is for the purpose of segregation, as they have not the character to resist the importunities of unprincipled men when thrown on their own resources. The result is that when they are released from the institution they shortly return in a state of pregnancy, or marry some one unable and unfit to rear a family. In either event there is an addition to the dependent class. With the oviduct severed this danger is absolutely obviated. In case of the male the desire for the opposite sex is in no way diminished; his mind is strengthened and his nervous system benefited from the reabsorption of sperm. It has a decided effect on the centers of self-restraint, besides improving the physical condition, as the masturbator refrains from excessive indulgence in this practice. Almost wholly as the result of increased will-power, the rapist or criminal will be aided in resisting his pernicious impulses. Thus we have a means of preventing procreation in the unfit, at the same time improving the condition of the unfortunate individual.

316 Board of Trade Building.

ABSTRACT OF DISCUSSION

DR. L. H. MONTGOMERY, Chicago: If the stigmata of a defective or degenerate are transmitted to the children in many instances, as I firmly believe, how are we going to be entirely satisfied, scientifically and otherwise, that tuberculosis is never transmitted to the offspring? We are all aware that syphilis, insanity, epilepsy and other neurotic conditions are handed down and—due to prenatal influences or otherwise—even alcoholism is inherited or transmitted sometimes. We all see instances of these influences transmitted to the offspring. How are we going to do away, entirely, with this question the author has just raised?

DR. F. C. VALENTINE, New York: Every specialist in genitourinary diseases must agree with the important physiologic and surgical points brought forth by Dr. Sharp. For emphasis it may be permitted to elaborate them by separate discussion. He says that vasectomy is easy to perform; to this one may add that it is the simplest operation in genitourinary surgery. It is well known that the health of the testicle is not impaired by severing its excretory duct, as the testicle does not suffer from occlusion of the duct, as occurs in epididymitis. Moreover, within the last few years many vasectomies have been performed, at White's suggestion, in the hope of thereby relieving prostatic hypertrophy; the testicle, so far as literature shows, was in no wise affected thereby. Two objections to the operation at once occur to the mind, namely: Most, if not all, those operated on were prisoners, therefore the power to procreate was taken from them under duress; it remains questionable that we have a legal right thus to deprive them. On the other hand, the public will soon learn that vasectomy does not influence the power to perform sexual intercourse, but does away with the risk of impregnation. This would lead many sexual profligates to importune physicians for this preventive operation, which involves practically no pain, and, if carefully done, is without danger. To say that no practitioners would be found thus to subvert the purpose of marriage, would be expressing a faith in the morality of the profession even greater than that which I possess. In mitigation thereof, it is but proper to admit that should the person operated on desire the restoration of his procreative function, the continuity of the severed vas and its patency can be restored by a second operation. The restoration of the vas is by far a more delicate and difficult operation; nevertheless, when properly performed, it has proved successful. That vasectomy can impart stamina, moral strength, the ability to resist immoral impulses and temptation, as suggested by the author, is, I must confess, an entirely new idea. While no explanation presents itself for this peculiar psychologic victory, the author merits inexpressible credit for the results he has obtained. His essay will doubtless lead many other surgeons of reformatory and penal institutions to test the question. If the reduction of criminals results his name will go down in history as a notable pathfinder.

DR. W. FORREST DUTTON, Walker's Mills, Pa.: It is not clear to me what is meant by the defective classes and their limitation. We know that with the increase of population the defectives are bound to increase. We cannot yet deny the part played by hereditary influence. I think we have discovered the efficacy of educational factors in many cases, and that instruction should bear a great deal on these things. If we get at the root of all this evil, we will have no trouble at all in preventing the defective classes. In the adoption of so many radical remedies for wrong conditions in the past, I think the educational feature is the factor that should be paramount in dealing with defective classes, whatever they may be.

DR. WOODS HUTCHINSON, New York: Crime is a medical problem in at least half of its extent; and I look forward to the day when the physician will be looked on as the criminologist of the country, and when our police courts and our police administration will be put largely under medical control; and when that time comes we shall save half of the cost of our courts, our prisons, and our poorhouses. We have the humiliating spectacle of the defective criminal insane of the community, 2 per cent., putting to enormous expense and holding in terror the other 98 per cent. of the community, because we have never taken any steps to stop this at its fountain head by preventing this reproduction of defectives. Those questions of the increase of crime are very difficult of settlement; because, in the first place, we are enlarging our definition of crime constantly, making many offenses which were not considered offenses before; as, for instance, in the prohibition communities it is a crime to buy a drink, and in our new tuberculosis campaign we have taken away our former right to spit. Therefore, it is not safe to judge by the apparent increase in the number of convictions. On the other hand, it seems almost certain that these people are at least holding their own with the rest of the community. They have an enormous fecundity. I had the opportunity, recently, of seeing the family records of defective children who had been committed to the New Jersey home at Vineland. Over three hundred records had been taken for the purposes of correctional care. Most individuals had from one to three, and in some cases six or seven, defective relatives; and the families were large, running anywhere from six to twelve and fourteen. The birth-rate is high among such people; on the other hand, they have a very high death-rate, so that helps to keep matters level. About one-third of all our criminals are born of criminal ancestors, and that reproduction might have been prevented if we had taken the matter in hand. Dr. Sharp has made a valuable practical contribution to this question, particularly the fact that it is an operation which is so painless and produces so few undesirable results that defectives are willing to submit to it of their own accord. That, I think, at first appears almost too good to be true; yet those people are not at all desirous of having children; it is not only the feeble-minded who would be glad to be relieved of that responsibility. One of the objections made to this operation is that it might become popular in other classes of the community. By putting these people in this condition we can allow them to return to outdoor life and to a self-supporting existence. Physicians having anything to do with defectives are aware that the most serious practical problem in the care of the female defective is this question of preventing reproduction. These women have to be kept under custodial care during child-bearing life. A feeble-minded man has to find a feeble-minded woman before he can procreate; a feeble-minded woman has no such limitation. A movement of this sort would immensely increase the production of defectives in the community. Whether it is going to be productive of all the moral and hygienic benefits to the defectives themselves that Dr. Sharp claims for it I do not know. It is only fair that the male gland should be subject to the same assaults as the female gland has for twenty years past, and see what the results are. I can easily believe that the criminal and the defective would be rendered more amenable to discipline by this operation, inasmuch as it has been habitually practiced on horses and other animals for the purpose of making them more amenable to control.

Dr. Charles A. Rosenwasser, Newark, N. J.: As vice-president of the Dependency and Crime Commission of New Jersey, I took part in an investigation as to the causes of dependency and criminality, and had occasion to note the important part played by heredity in the development of the defective and delinquent. That there is urgent need of doing something practical and effective to lessen the propagation of the unfit, has been strikingly shown by the investigation conducted some years ago in Illinois, as a result of which it was learned that all the defectives and delinquents in the state at that time, could be traced to one hundred and fifty families. I intend to have introduced into the legislature of New Jersey, this winter, a bill similar to the one introduced in Illinois this year, making the sterilization of habitual criminals compulsory. And, at some later time will take up the defective class. As my work lies largely with inebriates, a class of patients with weakened will power, I am especially interested in the statement that the operation of vasectomy helps to restore the will power, and I hope to be able to test its efficacy in the near future. As to the value of education in lessening the propagation of defectives and delinquents, I am not very hopeful. That education is of very scant value in such matters is seen in the attitude of the medical profession toward the alcohol problem. Physicians as a class are well informed as to the baneful effects of alcohol on the individual and on society, yet among them we find very few total abstainers. If enlightened persons cannot be brought to total abstinence by education, how can we expect to educate a defective or delinquent to abstain from sexual intercourse or from propagation?

Dr. J. N. Hurty, Indianapolis: I have watched the progress of this work with a great deal of interest. I do not think that we have any figures as yet showing that much in a direct way has been accomplished; but I believe that this may be termed a higher hygiene, through which we can hope to better the race. It is futile to educate these people with criminal stigmata. You can't do it. Education does not reach them at all. They have little moral sense, little moral force, and while you can tell them, and they can in turn preach to you the morals of the situation, they will go straight off and commit the acts. They have no will power, no force of mind, to withstand temptation. So education will not reach them. The knife only can reach them. I was at Mr. Vanderbilt's estate at Asheville. He raises all manner of animals there—cats, hogs and dogs—of many varieties. I was standing near the man who was in charge of the beautiful collies at the kennels; one of them (a female) came up to me, and she looked so pleasant that she seemed to me to have a laugh on her face. I patted her on the head, and she was duly grateful for the attention. I asked him, "Do you have any vicious dogs here?" He said: "Do you suppose that we would breed from vicious animals? If a vicious animal appears here we kill it; we have nothing to do with them at all; and the result is that we have no biting animals, but only those amenable to instruction." Why cannot we apply this to the human family? It seems to me that the application is possible; and I would not term it inhuman. It could not interfere with man's rights. A person who is morally defective has no right to impose another defective on the human family. We take from them their lives when they are murderers—hang them, electrocute them—and it is not nearly so severe to take from them their right to procreate. It has already been shown that there are many of this class who prefer not to procreate and voluntarily submit to sterilization.

Dr. W. Forrest Dutton, Walker's Mills, Pa.: I should like to have Dr. Hurty define the limits of this class. That is to say, What is meant by defectives in the broader sense of the word?

Dr. J. N. Hurty, Indianapolis: That would be difficult, indeed. At the present time I would confine vasectomy, if we adopt that method, to those convicted in the courts. We could not extend it further at present; but science may advance some time in the future so that all could be reached. The law in Indiana says that the man shall be examined; if he is found unfit, and has the stigmata of degeneracy, then he is sterilized. The method is not prescribed; any method may be used. That is about as far as we can go at the present time.

Dr. Harry C. Sharp, Indianapolis: In tuberculosis, of course, we are not dealing with a defect. There are families that have low vitality; and it seems to me to be transmitted from one generation to the other. As to the danger of vasectomy becoming popular with a certain class, I fully comprehend that; and I think we should have on the statute books of every state (and we in Indiana realize this since the matter has become so generally understood) a law attaching criminal indictment to any one submitting to this operation or performing the same without due process of law which would be binding. The statement that no one voluntarily gives up the power of procreating, is, in the face of facts, entirely wrong. Many women in this country, and a great many more in Europe, particularly in France, have submitted to major surgical operations in order to avoid procreation. We are all human beings, and we are all submitted to temptation. The one who is normal withstands the temptation; and the one with weaker powers of resistance succumbs. The present law in the state of Indiana, and the only one I think justifiable now, is the one dealing with people in the public institutions. They may have committed crime; they may be in our poor asylum, orphans' homes, insane asylums, or institutions for the feeble-minded. I stated in dictation of my paper (its omission was an oversight of my stenographer) that while the apparent increase in France is not borne out by facts, the definition of crime has been materially extended in several fields; law has been more vigorously enforced. Furthermore, regarding insane asylums, heretofore people have kept their afflicted relatives at home, now they put them in public institutions. All those things contribute to show an increase in criminals and defectives; nevertheless, the actual increase is out of proportion to the increase of population.

I began this work in October, 1899, and from 1899 to 1907 this operation was done on 176 men in the Indiana Reformatory on request. The request was solely for the purpose of relief from the habit of masturbation, and I will give as an illustration the story of my first operation, in October, 1899. A boy 19 years old came to me and asked that he be castrated, as he could not resist the desire to masturbate. I first had him put in a cell with a fellow inmate, thinking that perhaps he would be abashed and the sense of shame would prevent him. He came to me again, still insisting on castration, saying it was just as bad as ever. I did the operation, and two weeks afterward he came to me and said I was just fooling him, that I had not operated on him and he wanted the other operation. I asked him to wait two months and then, if he was no better, I would perform castration. In two months' time he came to me and told me he had ceased to masturbate and that he was all right. I asked him if he had lost any desire or pleasures of the gratification. He said: "No, but I have the will power to restrain myself." That institution conducted a school of letters. This patient was unable to make any progress in the school. Three months after that operation he made satisfactory advance in the school. This was true, practically, of every man operated on; every man who has ceased to masturbate has assigned the same reason: practically every man has told me he sleeps better, feels better and has a better appetite. In that institution the men are sent out on parole. We have satisfactory and unsatisfactory paroles. That is, those men who violate their parole and are brought back to the institution, "jump their parole" (as it is termed), which means that they leave their place of employment and run off. About 65 per cent of the average of that population are satisfactory paroles; that is, of the number of men who are paroled, 65 in 100 receive their final discharge as "satisfactory"; 35 are either returned or leave their place of employment. My last report indicated 203 of the paroles in these men who had been operated on in the last ten years, and 5 of that 203 were unsatisfactory. Since this law was enacted, of course, we have been doing the operation by means of a commissioner appointed. The man's ancestry is inquired into. If the man has had syphilis he is not considered a fit subject to procreate, and he is sterilized. Any man in a criminal institution, when told that he is to be operated on, resents it; so that all these men we have operated on resent it at the time; but subsequently they approve. I have operated on three physicians, and they have all assured me that they have a decided lessening of muscular and nervous fatigue.

The Histology of the Posterior Lobe of the Hypophysis.—Just behind the posterior lobe of the hypophysis, W. Haberfeld (*Anat. Anz.* Sept. 1, 1909, xxxv 98) finds in the human fetus a peculiar structure, the persistence of which might cause some confusion in a post-mortem diagnosis of glioma of the hypophysis. On the Cohnheim theory, this group of cells also affords an explanation of the embryonal rest from which a glioma of the hypophysis would arise. It occurs almost constantly in the fetus (in 5 out of 6 cases) and the new-born (10 out of 11 cases), is about one-fourth the size of the posterior lobe, and is usually found behind and a little below the posterior lobe. The body is made up of very typical glia cells and usually contains a lumen lined with ependymal cells that have very fine cilia. There is no sharp line of division between the glia tissue and the ependymal cells. This body has not been found in the adult or in children older than 3½ months.

THE EFFECT OF INTERCURRENT DISORDERS ON PRE-EXISTING EPILEPSY *

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In the summer of 1899 my attention was first directed to the effect which intercurrent troubles have on epilepsy and mental diseases. At that time, a small epidemic of measles appeared at the State Hospital for the Insane at Independence, Iowa, and, among others, six epileptics acquired the disease. These patients were not under my direct charge, but I saw them frequently, and it was my opinion, as well as that of Dr. Joseph Ohlmacher, in whose immediate service they were, that their convulsions were lessened in number. This opinion, however, was based merely on general observation, and there are no definite records to support it.

The next year, during a prolonged epidemic of typhoid fever, a large number of epileptics became ill, and on the study of these patients my paper is chiefly based. As opportunity offered since that time, I have kept a record of other cases so that now I have notes on a considerable number of epileptics who developed measles, scarlet fever, tonsillitis, pneumonia, grip, gastrointestinal disorders, and pregnancy, or who sustained various injuries, but in nearly all the short duration of the illness, the relative infrequency of the seizures, and the lack of any definite knowledge as to the number of seizures when the patient's general health was good, have prevented me from drawing any positive conclusions, and such cases have been eliminated.

Inasmuch as attacks of petit mal, especially in a large hospital for the insane, are not likely to have been carefully observed in individuals during a state of health, not much has been said here about them. The same is true of psychic equivalents. It is worthy of note, however, that during the typhoid epidemic the patients were carefully observed both day and night by more or less competent nurses, whereas their records previously had been kept by attendants who were by no means always competent or careful. Such error, therefore, as may be due to inaccurate observation is wholly on the side of the contention of this paper. In almost every instance, the bromids were discontinued during the period of acute illness and begun again during convalescence. Abstracts only of histories are given.

Case 1.—*Summary.*—Patient, man, aged 40, single; three cousins were insane. Epilepsy began at 7 years of age; patient sent to the state hospital at 25. Gradual mental deterioration. Severe attack of typhoid in 1896; pleurisy in 1898 and typhoid again in 1900. Previous to latter, three or four major convulsions a month in addition to occasional attacks of petit mal. During forty-six days of typhoid one light convulsion. Toward the end of convalescence, a remarkable diminution in the frequency of respiration. About a year later, another prolonged period of this respiratory disturbance. Subsequent to recovery, convulsions about the same, but mental deterioration more rapid.

History.—Family history was little known except that two cousins on the mother's side and one on the father's were insane. The patient's general health was good so far as known. He had a good common school education; never used liquors to any extent.

Present Disease.—The patient had epilepsy (both petit and grand mal) since 7 years of age. When 24 years old, his mind began to show signs of failure, and the next year he was sent to the state hospital. At that time he usually had from three to twelve fits within a period of thirty-six hours, and then there was an interval of two to four weeks. A stomach aura was usually present. For three weeks before admission he had been sleepless, irritable and despondent; had threatened to cut his throat, and it was feared that he would do violence to others. At times imagined himself in hell, and again thought he was in heaven. He was first admitted to the hospital in 1886, and remained there most of the time subsequently. At first he was pleasant and fairly bright, but as time went on he became more irritable and demented and excessively religious. He had from 1 to 8 severe epileptic convulsions per month, the average being about 3 or 4. In addition to this, there were occasional petit mal seizures.

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909. Considerations of space compel the abbreviation of this article in The Journal by giving parts of the case reports in abstract. *The complete article may be found in the* Transactions of the Section and in the author's reprints.

In 1896 he had a severe attack of typhoid fever. There is no record as to the number of epileptic seizures during this illness, but it is noted that during convalescence he had them very frequently. In 1898 he had an attack of pleurisy, lasting three weeks. On July 27, 1900, he was again taken ill with typhoid. His attack was unusually severe and lasted six weeks. During the first twelve days, his temperature was usually 104 to 105, and the highest records, 105.8 and 106, were charted on the ninth day. The nervous symptoms were pronounced throughout. During the greater part of the high febrile period, he was delirious and had a marked tremor, and up to the end of his illness he was greatly confused. He had a very well-marked peripheral neuritis, and for four weeks had albuminuria but no casts. The Widal reaction was first obtained August 2. From August 6 to 10 he was very ill, with low muttering delirium, and his death was daily expected. On August 12 he seemed a little better, and from this time he slowly improved. He had a short epileptic attack with slight convulsive movement August 24. At that time his temperature ranged from 99 to 102, pulse 90 to 110, and respiration almost normal. At the end of August his temperature was practically normal, pulse 85 to 105, and respiration a little above normal. September 1 his temperature went to 101.5. There was then a steady decline in temperature and pulse so that at midnight of September 3 his temperature was 95.8, pulse 90, and respiration 18. Six hours earlier his respiration had been 34. From September 3 to September 8 his temperature slowly rose till on the latter date it was normal. From September 4 to 6 his respiration was from 16 to 18, but on the morning of September 7 it was 5 per minute; at noon, 8, and at 6 p. m., 12; September 8, respiration at corresponding hours, 16, 8 and 10; September 9, 6, 8 and 8; September 10, 6, 7 and 5; September 11, 5, 4 and 4. During this time he slept soundly at night, and even during the day was often found in such deep sleep that it was difficult to arouse him, but aside from this somnolence and his respiration, nothing unusual was observed in his condition. He was considerably emaciated, but was on light diet and was gaining in weight. At 5 a.m. on the 12th he had a severe epileptic seizure, and at 6 a. m. his temperature was 98.8, pulse 88, and respiration 18. At 9 a.m. he had a second severe convulsion, and from this time up to September 17, when he was discharged from the sick ward, his temperature, pulse, and respiration were practically normal. It is worthy of note that though at the time he was taken ill, his respiratory rate was normal, it rose steadily from that time until, on the sixth day of his illness, it was 56, and for ten days thereafter it was in the neighborhood of 40 to 45 nearly all the time, and this without any apparent pulmonary complication. The record of his epileptic seizures for the months preceding and following his illness is as follows: April, 1900, 4; May, 1900, 1; June, 1900, 4, and for twenty-seven days in July, 4. Then there ensued a period of forty-six days during which he had but one very slight attack. In October, 1900, he had two attacks: in November, 3; December, none; January, 1901, 4; February, 1; March, 10.

After he became convalescent, and up till January, 1901, his general condition seemed somewhat improved, but after that time he became worse mentally, was more silly than he had ever previously been, and the attacks of depression which had preceded his illness were succeeded by periods of mild excitement. His weight August 31, 1900, was 101½; by January 1, 1901, it had reached 142½, and on March 31 it was 143½. In April, 1901, he is described as being much more stupid than before, and spending much of his time asleep in his room. His seizures had ranged from one to eight per month in the interval, but were on the average a little more frequent than before the attack of typhoid. In June he was sent to the sick ward on account of his stupidity and "queer feeling" which he had in his head. When received there, his temperature, pulse and respiration were normal, but two days later his respiration again became slow, and during the next four days ranged from 6 to 14 per minute. There was no other change in his condition during this time except that he was very stupid and unusually religious even for him. After coming to the sick ward, he had no bromid, though he had had it previously. On June 12, after praying constantly for fifty minutes, he had a severe seizure at 3 a. m. On June 13 he had two seizures, and on the same day his temperature rose without apparent reason to 102, falling shortly afterward to normal. These seizures had no effect in increasing the rate of respiration. Throughout the remainder of June, all of July, and up to the middle of August, his respiration continued slow, rising gradually during that period from 6 to 12 per minute to about 14 to 20 a minute by the middle of August. He was very greatly disturbed mentally; thought he was to be killed on account of some religious matter, and believed himself cured of epilepsy by the direct intervention of God, though he was at the same time having more numerous seizures than at any previous time of his life. At the end of 1903, he is described as having failed considerably mentally.

Case 2.—*Summary.*—Patient, man, aged 26; single; no occupation. Paternal grandparents defective mentally. Epilepsy began at 17, and mental deterioration was noted a year later. On Sept. 1, 1900, he developed an attack of typhoid fever lasting seven weeks. Albumin and casts were present with very marked irregularity of the pulse. For five months preceding he had an average of fifty-four seizures a month. During the fever he had 3 attacks; in the ensuing three months he had 5, 11 and 10 seizures, respectively.

Case 3.—*Summary.*—Patient, man, aged 27; single; family history negative; at 10 years sustained a severe compound fracture of the skull with considerable loss of bone in the frontal region. Six years later a convulsion followed an attack of scarlet fever. Attacks continued, and at 22 patient was trephined. He was admitted at the state hospital at 26; was irritable and demented. August 2 he went to sick ward with typhoid, which lasted about four weeks. Temperature was 103 to 105.8. Albumin and casts were present. Previous to typhoid, attacks came from four to fifteen per week. There were none during illness and, in month following, seventeen.

Case 4.—*Summary.*—Patient, man, aged 29; single. Epilepsy for ten years. Mental symptoms well marked, but few convulsions. No attacks during a mild run of typhoid. A subsequent attack of acute articular rheumatism with some mental improvement.

Case 5.—*Summary.*—Patient, man, aged 37; married; farmer. Father drank; an uncle was alcoholic and insane. No record of date of onset of epilepsy. Insane four years. A prolonged attack of typhoid in August, 1900, with pleurisy and pulmonary tuberculosis. No seizures during two months of illness and some improvement in general mental condition. Change not permanent.

Case 6.—*Summary.*—Patient, man, aged 22; single; family history unreliable but probably negative. At 16 months of age, following an injury to the head, patient began to have attacks of petit mal, followed later by grand mal; he was admitted at the state hospital in March, 1900. He was in very fair physical condition, but was much demented. He averaged from three to seven convulsions per month when taking bromid, and, in addition, had occasional attacks of mental excitement. In August, 1900, he developed typhoid fever which ran a relatively short course from the date of its recognition, with temperature of 100 to 104. During his illness, the convulsions were about as frequent as formerly, and attending them there were some striking variations in temperature and pulse. Slight improvement mentally and physically during and after convalescence, but no permanent change.

CASE 7.—*Summary.*—Patient, woman, aged 24; single. Maternal cousin epileptic. Epilepsy began at 8½ years. Marked mental deterioration appeared at 15. At 24, patient developed typhoid fever, complicated by pneumonia, otitis media and frontal sinus trouble (?), and running a course of eleven weeks. Seven seizures during her illness, but only one positive attack during the continuance of high fever. Increased mental deterioration and number of seizures after convalescence.

CASE 8.—*Summary.*—Patient, man, aged 31; single. Family and previous personal history negative. Epilepsy appeared at 13. Second admission to state hospital May, 1900. Patient was demented and in rather poor physical condition. August 14 he was found to be ill with typhoid fever, and died twelve days later of intestinal hemorrhage. No seizures during his illness; from ten to twelve per month previously.

CASE 9.—*Summary.*—Patient, man, aged 41; single. Insanity and epilepsy on father's side. At 9 years of age, epilepsy developed. Patient admitted to the state hospital at 34; was irritable and demented. Attacks of grand mal, averaging fifteen to twenty per month. Chronic bronchitis and asthma for some time. In September, 1900, developed typhoid fever, and died on the thirteenth day. No convulsions during his illness.

CASE 10.—*Summary.*—Patient, man, aged 22; single. Epilepsy since 4 years of age. Epileptic attacks frequent, and dementia well marked. In September, 1900, patient developed typhoid fever, and nine days later died of typhoid and croupous pneumonia. No seizures during his illness.

CASE 11.—*Summary.*—Patient, woman, aged 23; single. Epilepsy began at 3 years and continued to her death. In her twenty-third year patient developed typhoid fever and died in the midst of the typhoid in status epilepticus.

History.—Father living and well at 64; drinks moderately. Mother living at 54; has been an invalid for years with some condition causing contraction of the arms and legs. No history of insanitiy, epilepsy, tuberculosis, or cancer in the family.

The patient was as bright as the average for the first three years of her life, and had good health. Menstruation began at 13, and was normal at the time of examination.

Present Disease.—At 3 the patient began to have epileptic fits, from one in three or four months to three or four a day. During the past five or six years previous to admission, the fits were worse at the menstrual period; there was some mental failure for three years, but for four weeks previous to admission, deterioration was very rapid. There had been no convulsions for two months before admission. The patient was incoherent in conversation; appetite poor; slept well; admitted to the state hospital April 22, 1902.

Examination.—Physical condition was negative except for enlarged uterus and increased deep reflexes. Most of the time the patient was quiet and drowsy; occasionally was restless. Her speech was somewhat incoherent; at times drawling and characteristically epileptic; orientation impaired; intellect, memory and mental reaction only fair. She was irritable, confused, and at times emotional; wanted to go home, and said that she was sent to the hospital to die; thought that everyone discriminated against her, and that she was treated badly. She did not want to eat, as she thought that prevented her recovery. During the remainder of April following her admission, she had seizures almost every day; in May, had 24 day seizures, and 4 at night; during June, had 5 seizures in the daytime and 10 at night; was growing constantly more confused. On July 1 she had 3 attacks; on the 2d, 2; on the 3d, 2; on the 4th, 3, and on the night of the 5th, 8. At 8:30 on the 6th she had a convulsion, and this was repeated at 9, 9:30, 10, 10:30, 10:40, and 11:15. Between 11:15 and 12 m. there were five seizures, and from 2 p. m. they occurred every fifteen or twenty minutes, and she died at 4:20 p. m. in status epilepticus.

Autopsy.—This revealed an acute splenetic tumor, recent ulceration of Peyer's patches, enlargement of the abdominal lymphatic glands, and a few hemorrhages into the lungs. A culture from the mesenteric glands showed a pure growth of typhoid bacilli.

CASE 12.—*Summary.*—Patient, woman, aged 19; single. Three brothers had epilepsy. Patient developed epilepsy at 6 years of age, and the disease continued to her death from tuberculous bronchopneumonia at 19. Seizures were about one per day previously to, but much less frequent during her last illness, and entirely absent during last four weeks. At the postmortem examination it was found that, in addition to tuberculosis, she had disseminated cerebral sclerosis.

CASE 13.—*Summary.*—Patient, a boy, aged 11; schoolboy. Alcoholism and insanity in the family. Hemiplegia at 14 months, following an injury to head. Directly after, patient began having convulsions, limited to one side, at first infrequent but later coming as often as three or four per month. At 6, he had a severe attack of typhoid, and after this no more convulsions until at 10 years he had an attack of scarlet fever, after which convulsions reappeared and occurred once or twice a month. Following circumcision and bromid treatment, attacks ceased for eight months.

Family History.—Paternal grandfather drank moderately; father drank to excess at times. Mother died at 37 of consumption; had been insane for two months. One sister was "nervous" preceding her confinement. History otherwise negative.

Personal History.—There was no trouble at patient's birth. He was unusually healthy as a baby. At 14 months, he fell from a chair and hurt his head. There was no external sign of injury. Immediately following this, he had a partial right hemiplegia and shortly afterward began to have fits which were limited to the right side. Each convulsion lasted about ten minutes, and they averaged about one a month. He would become unconscious, fall over, and bite his tongue. Before the accident he could say a few words and could walk, but after it he did not speak or walk for six months. He is now left-handed; before the injury was right-handed. At 6, he had a severe attack of typhoid fever, and was in the hospital for six weeks. Following this he had no more convulsions until he was 10, when he had an attack of scarlet fever, after which they began again, still limited to the right side.

Examination.—When first seen, Sept. 20, 1905, the patient was well developed and well nourished. There was nothing unusual in the formation of head or face. The left hand and arm were distinctly larger and stronger than right; there was practically no difference in the legs. The right pupil was one-quarter larger than the left; the pupillary reflexes were normal. The deep reflexes were slightly greater on the right than on the left; no Babinski, and no Romberg. The foreskin was much elongated and constricted. Physical examination was otherwise negative. The patient was a little slow in responding to questions, and was not quite as bright as other children in school, but the mental defect was not great. Convulsions were occurring from once in two weeks to once a month.

He was referred to the surgical clinic, where a circumcision was done, and he was at once placed on a bromid mixture. He remained under treatment eight months, during which time he had no convulsions, and according to the testimony of his father and his teachers, he was much better mentally.

CASE 14.—*Summary*—Patient, woman, aged 31; married; housewife. Family history negative except that her father showed slight evidence of dementia. Epilepsy began at 17, and eventually she had attacks once or twice a month except during each of seven pregnancies, when they wholly ceased.

Family History.—Father died of an accident at 70; a case of mild senile dementia. Mother died at 68; cause unknown. Five brothers died in childhood; exact cause not stated, but it is said that they had no convulsions. One brother and five sisters are living and well.

Personal History.—The patient's general health was good in childhood; at 2, she had severe diarrhea following teething, but had no convulsions. Since then she was never ill except for the epilepsy. At 13, menstruation began. It was regular, but less in amount than is usual. At 14, she began to do housework and has worked hard ever since. She was married at 20, and has had two miscarriages and five living children. One of the latter died of pneumonia, one of enteritis, and one of "spasms." The two remaining are healthy.

Present Illness.—When about 17, the patient caught cold immediately following the onset of a menstrual period, and the flow ceased; she then had her first convulsion. She cried out, whirled around two or three times, and then fell over backward; bit her tongue, and was unconscious for over half an hour. A second attack occurred a month later. Since then she has had them about once or twice a month except during her pregnancies. The attacks always come on during the night or as she is getting up in the morning. Sometimes there is an aura, "something rushes up into my head;" often there is none. The attack is always preceded by a cry; sometimes by the shaking of the hands. She falls over; has convulsive movements, bites her tongue; froths at the mouth; passes urine, and is completely unconscious. With the beginning of every pregnancy the seizures have ceased and have not returned until after delivery, shortly after which they begin again. They do not appear to have been unusually frequent following the intermission. The physical examination is entirely negative except that the patient has a lacerated cervix and perineum and gonorrheal urethritis.

Case 15.—*Summary.*—Patient, woman, aged 45; married; occupation, housework. Family history negative. Epilepsy began at 26 during her first pregnancy. She has been pregnant four times since, and each time her epileptic attacks have recurred, though she was entirely free from them in the interval. The patient is now demented as well as epileptic. She was seen Aug. 12, 1908, with the permission of Dr. W. M. Chowning.

Family History.—Negative so far as learned. Father and mother died of old age. One brother and a sister are living and well.

Personal History.—The patient was married at 26, and up to that time had been perfectly well. One year after marriage she gave birth to a child. When her pregnancy was three months advanced, she had her first convulsion. She was sitting in a rocking chair, became unconscious; fell over; bit her tongue, and her entire body jerked. After delivery she had no more convulsions until she became pregnant a second time, and another child was born two and one-half years after the first. She had six or eight seizures during this pregnancy. Two years later a third child was born with a similar experience on the part of the mother during that pregnancy. During the fourth pregnancy she had an increased number of convulsions, and also began to show symptoms of intellectual deterioration. At the time of the taking of this history, the youngest child was two years and two months old, and the mother was again three months pregnant. She had no convulsions during the interval, but since the beginning of the pregnancy had had six major epileptic attacks.

She was a well-nourished woman, apparently in good general health, but she had a low and narrow brow and dull, heavy expression. Heart and lungs were normal; arteries moderately thickened; patellar reflexes normal. Pupils were equal and reacted normally to light and distance. The patient was evidently not only an epileptic, but considerably demented. That she should remain free from the attacks in the intervals between her pregnancies seemed almost incredible, but careful questioning failed to elicit any evidence of either petit or grand mal during that time.

Case 16.—*Summary.*—Patient, man, aged 57; hardware merchant, and single. Family and previous personal history negative. Epilepsy began at 32 years of age. At 44 patient had an attack of mental depression with some confusion, lasting about eighteen months without cessation of the convulsions, which occurred from once a week to one every month or two. At 55, he sustained a fracture of the ankle. For two years afterward he showed great confusion, but had no convulsions.

Family History.—Father died at 79, of old age; mother, when comparatively young, of unknown cause. Two half-brothers are living and well. So far as known, there is no other case of insanity, epilepsy or other nervous disorder in the family; no tuberculosis.

Personal History.—The patient was a strong and healthy boy, and aside from his epilepsy had little sickness throughout his life. He used beer and whisky in moderation. He never married. A good many years ago he entered the hardware business, and was able to continue in charge of his store up to 1889, when he was sent to a hospital for the insane.

Present Illness.—In his thirty-second year he awoke one morning to find his tongue sore, his pillow bloody, and his "stomach very much upset." The first positive attack of epilepsy occurred several months later. Shortly after retiring, he fell out of bed in the midst of a convulsion; was unconscious, and bit his tongue severely. A physician was called, and pronounced it "stomachal epilepsy." Attacks occurred at intervals ever since; at first, always at night. For some years he would go for two to eight months without an attack; later, they came much more frequently. He was first admitted to the state hospital Aug. 31, 1889. It was then stated that his mental trouble had been present a little over a week, and it was diagnosed as "acute melancholia." The cause ascribed was "disappointment at the marriage of an adopted niece." When first admitted he was greatly depressed; would not answer questions, and ate very poorly. A couple of months afterward, he is noted as being a little worse, forgetful, and confused. A few days later, a well-marked tendency to suicide appeared. On April 22, 1890, he was taken home "somewhat improved." He was returned on June 2, his mental and physical condition about the same as when discharged. He remained at the hospital a few months, and improved sufficiently to be able to go home again. Later he spent some time in the county hospital, and then was home again for a period of five years. He had never had a guardian appointed when he was at home, and was at least in nominal charge of his business. He was by no means well, however; had convulsions at intervals, ranging from a week to a month or two, and at times talked to himself, and was restless and uneasy. In August, 1902, he became unusually restless, ate little and slept badly. One night he broke the screen from his window and jumped from the second story to the ground, fracturing his left ankle. For two or three days after the injury his mind seemed perfectly clear. He then became greatly confused, and in this condition was sent to the hospital Aug. 26, 1902. There had been no seizures since the accident.

Physical Examination.—The patient was a small man, fairly well developed, and well nourished, with nothing unusual in the conformation of the head. There were many pimples on the skin over the shoulders. The left ankle was fractured. The heart, lungs, and abdominal organs were apparently normal; the radial arteries not thickened. The urine was negative except for the presence of a few leucocytes and red blood cells.

Mental Condition.—The patient's face had a pleasant but rather dazed expression. He entered at once into conversation, but was very much confused; often began, but rarely completed a sentence; seemed to lose the idea before he had fully expressed it, and even when it was recalled to his attention, he was unable to take it up again. He knew that he was at the hospital at Independence. It seemed to him that he had been there before, but he could not say; he was uncertain. When asked how he came to be here this time, he answered: "Well, he said he wanted me—the man that brought me. He said he would take me back there. I suppose they'd let me go again, wouldn't they? The strangers that brought me here?" When asked if he liked it there, he replied: "Well, I guess so far—I guess—well, I don't know. I think I'll be able to walk on that before long, won't I [pointing to leg] ? I suppose likely——" [considerable delay and he was asked what he meant to say] "I suppose it was all right for me to come here, wasn't it? They brought me here—something the matter with my leg or something. I don't know." [Picked at his nose and stared around.] "Well, I suppose that I'd be right here, wouldn't I?" When asked the date, he hesitated considerably; finally gave it as '92; thought the month was August, but could not go further. After a little delay, he named the president and governor correctly.

Course of Disease.—For two years after admission this man was under my care, was closely watched by nurses both day and night, and during that time he did not have an attack of epilepsy or anything resembling one. For a time after admission, he became more and more confused, and finally this reached such a degree that it was scarcely possible to get any meaning from his disconnected words. It was apparent, however, that he was constantly dominated by the idea that he had done something wrong for which he must make reparation. He would try to speak to the doctor about the matter every day during the period of his detention, yet if given time to explain his case, he became so greatly confused that it was impossible for him to formulate even the simplest sentence. His leg healed slowly, but his general health was good. At the end of two years he passed from my observation, but during his last three months he seemed a little less confused and somewhat more cheerful.

Case 17.—Patient, man, aged 28. Sister epileptic. Patient had epilepsy nearly all his life; he was irritable and, in later years, demented. He was admitted Oct. 18, 1897, in status epilepticus. He was unconscious, with frequent seizures; died Oct. 21, 1897, from pneumonia. His temperature was 101 to 102.2. The anatomic diagnosis was: atheroma of aorta; mitral stenosis; croupous pneumonia; cloudy swelling of the liver; scars from former trephine operation; adherent dura mater; thickened pia mater; sclerosis of cornu ammonis.

Case 18.—Patient, man, aged 25, who had had epilepsy since 4 years of age, following measles. No other statement was given as to etiology. Patient was admitted Sept. 23, 1900; died Nov. 2, 1900. Physical examination, at admission, was negative. Patient was much demented; had frequent seizures. October 29 he developed status epilepticus with axillary temperature of 104.2. From this until death, temperature continued high, reaching 108 (axillary just before death). During all this time he was having frequent seizures. Clinical diagnosis was: Status epilepticus with croupous pneumonia. Anatomic diagnosis was: right lobar pneumonia; hypostasis of both lungs; enteroptosis.

That bodily diseases, and also certain physiologic processes, exercise a profound influence on epilepsy has been recognized from the time of the earliest medical records. There is frequent reference in literature to Hippocrates'[1] statement that acute fevers can influence epilepsy both favorably and unfavorably, and, according to Beckhaus,[2] Plato has stated that lepers are free from convulsions. Lanzoni,[3] in 1691, reported the case of a woman who, during three pregnancies, each time had fits twice per month, and was free from them on all other occasions. De la Motte,[4] in 1740, records the case of a woman who became pregnant three times with boys, each time having convulsions, and five times with girls, with no convulsions. This case also developed about 1690. Both cases have been more or less discredited as being possible instances of eclampsia, the albumin test at that time being unknown. Their description, however, certainly does not suggest hysteria, and it does not seem likely that any one could have passed through so many attacks of eclampsia without a fatal result. In 1803 Maisonneuve[5] reported a man who became epileptic after fright on account of a dog-bite. The fits ceased during an attack of intermittent fever, reappearing when the fever was cured. Gérard,[6] in 1846, reported the case of an epileptic girl of sixteen who had about five or six fits per month. She passed through five attacks of intermittent fever, but each time the fits ceased, only to reappear when the fever disappeared.

In 1854, Delasiauve[7] made the first systematic attempt at a collection of cases, and, as a result of his observations, came to the conclusion that practically all severe and acute illnesses suspend or weaken the fits, especially in young epileptics with frequent attacks, this modification being more or less durable, and that chronic ailments diminish rather than abolish the attacks. He also pointed out that, in some cases, the epilepsy persists in spite of intermittent conditions, and may even be made worse by them. Since Delasiauve's time, a voluminous literature has grown up, but much of it consists of reports and observations on isolated cases, on account of which some widely differing opinions have been expressed. Thus, Lannois,[8] as recently as 1893, on the basis of a single case in which, in an epileptic infantile hemiplegic, erysipelas was accompanied by complete suspension of fits, and typhoid fever a little later in the same individual was accompanied by an increase in seizures, was able to come to the definite conclusion that, though intercurrent disorders have frequently a suspensory or curative effect on epilepsy, typhoid must be excluded from the list. In 1857, however, Schlager[9] had reported a case of epilepsy with mental disturbance in which typhoid caused the epilepsy to disappear, and in 1865 Wille[10] stated that the fits ceased during typhoid, but on complete recovery returned with increased severity. Wagner,[11] on the contrary, thought that epileptics were unfavorably influenced by typhoid. In very recent years, several men, such as Friedländer,[1] Séglas,[12] Béraud,[13] Beckhaus,[2] and Pelissier[14] have made more or less extensive collections of cases of intercurrent diseases and of pregnancy in epilepsy, and the opinion of practically all is that during the intercurrent trouble the influence is favorable in most instances, but that afterward the fits are often increased. Indeed, at one time the favorable effect of these conditions on epilepsy as well as insanity was so widely recognized that it was seriously proposed to infect epileptic and insane patients with various diseases; injections of turpentine and sterilized cultures of various bacteria were used a number of times with the hope of producing artificially the effects secured by accidental inoculation, and it was prophesied that some day such means of curing patients, including the building of hospitals for epileptics in malarial regions, would be generally employed.

In addition to the diseases already mentioned, epilepsy is reported to have been favorably influenced by pneumonia, scarlet fever, measles, whooping-cough, loss of blood, and skin eruptions, including the itch, while the favorable influence of traumatic experiences such as wounds and burns, to say nothing of operations, is very widely known. Clarke and Sharp[15] report their experience with epilepsy in twelve cases of measles, German measles and erysipelas, and strongly emphasize their belief that there is little improvement in the epilepsy accompanying these diseases, and that such improvement as is found is not permanent. So far as I know, however, practically no one contends at the present time that the effect of these intercurrent troubles is more than evanescent except in very exceptional cases.

In my series of cases, 11 patients had typhoid or typhoid complicated by some other trouble, and, of this number, 9 showed distinct improvement as respects the number of seizures; 1 was unchanged, and 1 died of status epilepticus in the midst of her attack of typhoid fever. One patient (Case 4) had no convulsions for three and one-half months after his attack of typhoid fever, and was better mentally for one year. In only one instance (Case 13) was there a fairly permanent favorable effect, and in several instances the seizures were really increased in and after convalescence as was also the rapidity of mental deterioration during subsequent months. An epileptic patient of one of the other physicians at the hospital in the same epidemic died of status epilepticus when well along in convalescence, though his epileptic manifestations had been much improved during the period of acute illness. Once tuberculous bronchopneumonia greatly reduced the number of supposedly epileptic attacks. Once typhoid caused cessation of the attacks, which were reinduced, four years later, by scarlet fever. Once pregnancy caused convulsions, and once it caused their cessation. In an old man with a severe traumatism, including fracture, a state of mental confusion was substituted for the attacks, and in two individuals dying of status epilepticus, pneumonia was also found. All the patients were more or less demented in addition to epilepsy, and none showed any permanent mental improvement. In most cases, there was more than the usual amount of mental dulness during the first few days of the typhoid, to be followed by some increase in mental activity in the midst of and toward the end of the disease. Didé[16] says that the convulsions are increased in frequency in the very early period of the typhoid.

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[1] Quoted from Friedländer: Ueber den Einfluss des Typhus Abdominalis auf das Nervensystem, 1901.

[2] Quoted from Beckhaus: Ann. d. Städtischen allg. Krankenhäuser zu München. 1890-92.

[3] Lanzoni: Ephémérides des curieux de la Nature, 1691.

[4] De la Motte: Traité de chirurgie, i, 1740.

[5] Maisonneuve: Recherches et observations sur l'épilepsie, Thesis, 1803.

[6] Gérard: Ann. méd.-psychol., viii, 1846.

[7] Delasiauve: Traité de l'épilepsie, 1854.

[8] Lannois: Rev. de méd., xiii, 1893.

[9] Schlager: Oesterr. Ztschr. f. pract. Heilk., 1857.

[10] Wille: Allg. Ztschr. f. Psych., xxii, 1865.

[11] Wagner: Reprint from Jahrb. f. Psychiat., vii, 1886.

[12] Séglas: The Influence of Intercurrent Diseases on the Course of Epilepsy, Paris Thesis, 1881.

[13] Béraud: The Relation of Pregnancy and Accouchement to Epilepsy, Paris Thesis, 1884.

[14] Pelissier: De l'influence des maladies infectieuses intercurrentes sur la marche de l'épilepsie. Thèse de Montpellier, 1893.

[15] Clarke and Sharp: Med. News, Dec. 1, 1900.

As respects typhoid, therefore, my experience is very similar to that of most other writers. The effect, temporarily at least, is almost uniformly favorable, but there are exceptional cases in which the influence is negative (Case 6) or in which it is highly unfavorable and even produces status epilepticus (Case 11). One of Clarke's and Sharp's patients, when well along with measles, died of status epilepticus and pneumonia.

As a rule, the effect of the individual convulsions on temperature, pulse, and respiration was negligible, but in three instances it was quite otherwise. In Case 2 there was, at two periods of the illness, great irregularity of the pulse, lasting several days, both periods corresponding closely in time to the convulsions, though there may have been no necessary connection. In Case 1 there was a remarkable respiratory disturbance at different periods of the illness. At the onset, the respiration was normal, but, as the illness increased, the respiratory rate rose to from 45 to 56 without organic pulmonary disturbance, and remained elevated throughout the period of acute illness. When convalescence appeared to be fairly well established, the respiratory rate had about reached normal. On the forty-second day of the illness, however, it dropped from 16 and 18 on the previous day to 5, 8 and 12. The next morning it was 16, but dropped again during the day to 8, and 10, and on the two subsequent days varied from 5 to 8. On the following day, September 11, it was 5, 4 and 4. The patient was eating fairly well at this time and gaining in weight, and nothing unusual was noticed in his condition except the respiratory disturbance and an excessive somnolence. At 5 a. m. of September 12 he had a severe epileptic seizure, and at 6 a. m. his respiration was 18, and continued normal in rate thereafter up to June 7 of the next year, when it again dropped to 6, and during the next two and one-half months gradually rose to 14 to 20. Seizures occurring during this interval had had no effect on it. In Case 6, also, there was a marked disturbance of pulse and temperature in connection with certain of the individual seizures, but not of respiration, and the disturbance did not accompany all the seizures. Mivart[17] has reported an epileptic patient with the unusually slow pulse rate of 20 to 24.

Friedländer[1] says that there is only one authentic instance (Prieger's[18]) of a cure of epilepsy by typhoid fever. Case 13 of my list would certainly be accepted as a cure if the subsequent history of the patient were not known, for there was a period of four years following the typhoid with no attacks.

Béraud,[13] in his Paris thesis on the "Relations of Pregnancy and Accouchement to Epilepsy," states that pregnancy is not a cause of epilepsy, and that the uterine epilepsy of the ancients is the modern eclampsia. If we disregard the cases of Lanzoni[3] and De la Motte[4] already mentioned, Béraud's statement was probably correct at the time he wrote. In 1890, however, Gudder[19] reported a woman who suffered from epilepsy during both of her pregnancies, and at no other time. Case 15 of my list clearly comes in this group. There are also many cases in literature in which existing epilepsy was made worse by pregnancy, including one additional case of Gudder,[19] Chambrelet's case,[20] Terillon's[21] case, and others. Though there is still considerable dispute as to the usual effect of pregnancy, the opinion of most recent writers is that it is favorable. Thus, in a series of thirty-one collected reports of cases, Béraud[13] found 8 in which its influence was unfavorable, 8 in which it was negative, and 15 in which it was favorable. Of the latter, the suspension of fits was complete in 8 and partial in 7. It may be worthy of note that in one patient (Terillon's[21]), on whom pregnancy had an unfavorable effect, typhoid gave the same result, and in one (Boyé's[22]), in whom pregnancy caused cessation of the seizures, typhoid also caused cessation. In all of Béraud's[13] cases, the effect, if any, was evanescent. Also the effect in the same patient was uniform. Thus, if the first pregnancy caused the fits to cease, the same results always attend subsequent pregnancies. Pearce[23] reported an epileptic patient of Hirst's, with no convulsions from the third month of pregnancy up to nine months after the birth of the child; also three other women who had no fits during pregnancy, but with recurrence after labor; a fifth woman had five children and had no attacks while carrying them, though having an attack once in three weeks at other times. An ovariotomy on this woman had no effect in diminishing the seizures. A sixth woman had an almost identical history. In the same article, S. Weir Mitchell is quoted as saying that he had never seen epilepsy made worse by pregnancy; that, on the contrary, he has often seen it made better, or entirely cease for the period of pregnancy and even into the puerperium. Putnam[24] reports a woman with no seizures during pregnancy, and final cessation of fits.

As already mentioned, traumatism is widely recognized as having a profound effect on epilepsy, usually meaning from his disconnected words. It was apparent, however, that he was constantly dominated by the idea that he had done something wrong for which he must make reparation. He would try to speak to the doctor about the matter every day during the period of his detention, yet if given time to explain his case, he became so greatly confused that it was impossible for him to formulate even the simplest sentence. His leg healed slowly, but his general health was good. At the end of two years he passed from my observation, but during his last three months he seemed a little less confused and somewhat more cheerful.

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[16] Didé: Rev. de méd., Feb. 10, 1899.

[17] Mivart: Lancet, London, Jan. 3, 1885.

[18] Prieger: Heilung der Epilepsie durch Typhus, Allg. Ztschr. f. Psych., 1877, vii, 685.

[19] Gudder: Quoted from abstract in Jour. Nerv. and Ment. Dis., January, 1892.

[20] Chambrelet: Jour de méd. de Bordeaux, Nov. 5, 1899.

[21] Terillon: Ann. de gynéc., 1881.

[22] Boyé: Traitement de l'épilepsie. Thèse, 1882.

[23] Pearce: The Protean Influence of Pregnancy on Idiopathic Epilepsy, Med. and Surg. Reporter, Jan. 2, 1897.

[24] Putnam: The Relation of Pregnancy to Nervous Diseases, Am. Med. Quart., April, 1900.

Case 17.—Patient, man, aged 28. Sister epileptic. Patient had epilepsy nearly all his life; he was irritable and, in later years, demented. He was admitted Oct. 18, 1897, in status epilepticus. He was unconscious, with frequent seizures; died Oct. 21, 1897, from pneumonia. His temperature was 101 to 102.2. The anatomic diagnosis was: atheroma of aorta; mitral stenosis; croupous pneumonia; cloudy swelling of the liver; scars from former trephine operation; adherent dura mater; thickened pia mater; sclerosis of cornu ammonis.

Case 18.—Patient, man, aged 25, who had had epilepsy since 4 years of age, following measles. No other statement was given as to etiology. Patient was admitted Sept. 23, 1900; died Nov. 2, 1900. Physical examination, at admission, was negative. Patient was much demented; had frequent seizures. October 29 he developed status epilepticus with axillary temperature of 104.2. From this until death, temperature continued high, reaching 108 (axillary just before death). During all this time he was having frequent seizures. Clinical diagnosis was: Status epilepticus with croupous pneumonia. Anatomic diagnosis was: right lobar pneumonia; hypostasis of both lungs; enteroptosis.

That bodily diseases, and also certain physiologic processes, exercise a profound influence on epilepsy has been recognized from the time of the earliest medical records. There is frequent reference in literature to Hippocrates'[1] statement that acute fevers can influence epilepsy both favorably and unfavorably, and, according to Beckhaus,[2] Plato has stated that lepers are free from convulsions. Lanzoni,[3] in 1691, reported the case of a woman who, during three pregnancies, each time had fits twice per month, and was free from them on all other occasions. De la Motte,[4] in 1740, records the case of a woman who became pregnant three times with boys, each time having convulsions, and five times with girls, with no convulsions. This case also developed about 1690. Both cases have been more or less discredited as being possible instances of eclampsia, the albumin test at that time being unknown. Their description, however, certainly does not suggest hysteria, and it does not seem likely that any one could have passed through so many attacks of eclampsia without a fatal result. In 1803 Maisonneuve[5] reported a man who became epileptic after fright on account of a dog-bite. The fits ceased during an attack of intermittent fever, reappearing when the fever was cured. Gérard,[6] in 1846, reported the case of an epileptic girl of sixteen who had about five or six fits per month. She passed through five attacks of intermittent fever, but each time the fits ceased, only to reappear when the fever disappeared.

In 1854, Delasiauve[7] made the first systematic attempt at a collection of cases, and, as a result of his observations, came to the conclusion that practically all severe and acute illnesses suspend or weaken the fits, especially in young epileptics with frequent attacks, this modification being more or less durable, and that chronic ailments diminish rather than abolish the attacks. He also pointed out that, in some cases, the epilepsy persists in spite of intermittent conditions, and may even be made worse by them. Since Delasiauve's time, a voluminous literature has grown up, but much of it consists of reports and observations on isolated cases, on account of which some widely differing opinions have been expressed. Thus, Lannois,[8] as recently as 1893, on the basis of a single case in which, in an epileptic infantile hemiplegic, erysipelas was accompanied by complete suspension of fits, and typhoid fever a little later in the same individual was accompanied by an increase in seizures, was able to come to the definite conclusion that, though intercurrent disorders have frequently a suspensory or curative effect on epilepsy, typhoid must be excluded from the list. In 1857, however, Schlager[9] had reported a case of epilepsy with mental disturbance in which typhoid caused the epilepsy to disappear, and in 1865 Wille[10] stated that the fits ceased during typhoid, but on complete recovery returned with increased severity. Wagner,[11] on the contrary, thought that epileptics were unfavorably influenced by typhoid. In very recent years, several men, such as Friedländer,[1] Séglas,[12] Béraud,[13] Beckhaus,[2] and Pelissier[14] have made more or less extensive collections of cases of intercurrent diseases and of pregnancy in epilepsy, and the opinion of practically all is that during the intercurrent trouble the influence is favorable in most instances, but that afterward the fits are often increased. Indeed, at one time the favorable effect of these conditions on epilepsy as well as insanity was so widely recognized that it was seriously proposed to infect epileptic and insane patients with various diseases; injections of turpentine and sterilized cultures of various bacteria were used a number of times with the hope of producing artificially the effects secured by accidental inoculation, and it was prophesied that some day such means of curing patients, including the building of hospitals for epileptics in malarial regions, would be generally employed.

In addition to the diseases already mentioned, epilepsy is reported to have been favorably influenced by pneumonia, scarlet fever, measles, whooping-cough, loss of blood, and skin eruptions, including the itch, while the favorable influence of traumatic experiences such as wounds and burns, to say nothing of operations, is very widely known. Clarke and Sharp[15] report their experience with epilepsy in twelve cases of measles, German measles and erysipelas, and strongly emphasize their belief that there is little improvement in the epilepsy accompanying these diseases, and that such improvement as is found is not permanent. So far as I know, however, practically no one contends at the present time that the effect of these intercurrent troubles is more than evanescent except in very exceptional cases.

In my series of cases, 11 patients had typhoid or typhoid complicated by some other trouble, and, of this

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1. Quoted from Friedländer: Ueber den Einfluss des Typhus Abdominalis auf das Nervensystem, 1901.
2. Quoted from Beckhaus: Ann. d. Stüdtischen allg. Krankenhäuser zu München. 1890-92.
3. Lanzoni: Ephémérides des curieux de la Nature, 1691.
4. De la Motte: Traité de chirurgie, i, 1740.
5. Maisonneuve: Recherches et observations sur l'épilepsie, Thesis, 1803.
6. Gérard: Ann. méd.-psychol., viii, 1846.
7. Delasiauve: Traité de l'épilepsie, 1854.
8. Lannois: Rev. de méd., xiii, 1893.
9. Schlager: Oesterr. Ztschr. f. pract. Heilk., 1857.
10. Wille: Allg. Ztschr. f. Psych., xxii, 1865.
11. Wagner: Reprint from Jahrb. f. Psychiat., vii, 1886.
12. Séglas: The Influence of Intercurrent Diseases on the *Course* of Epilepsy, Paris Thesis, 1881.
13. Béraud: The Relation of Pregnancy and Accouchement to Epilepsy, Paris Thesis, 1884.
14. Pellissier: De l'influence des maladies infectieuses intercurrentes sur la marche de l'épilepsie. Thèse de Montpellier, 1898.
15. Clarke and Sharp: Med. News, Dec. 1, 1900.

number, 9 showed distinct improvement as respects the number of seizures; 1 was unchanged, and 1 died of status epilepticus in the midst of her attack of typhoid fever. One patient (Case 4) had no convulsions for three and one-half months after his attack of typhoid fever, and was better mentally for one year. In only one instance (Case 13) was there a fairly permanent favorable effect, and in several instances the seizures were really increased in and after convalescence as was also the rapidity of mental deterioration during subsequent months. An epileptic patient of one of the other physicians at the hospital in the same epidemic died of status epilepticus when well along in convalescence, though his epileptic manifestations had been much improved during the period of acute illness. Once tuberculous bronchopneumonia greatly reduced the number of supposedly epileptic attacks. Once typhoid caused cessation of the attacks, which were reinduced, four years later, by scarlet fever. Once pregnancy caused convulsions, and once it caused their cessation. In an old man with a severe traumatism, including fracture, a state of mental confusion was substituted for the attacks, and in two individuals dying of status epilepticus, pneumonia was also found. All the patients were more or less demented in addition to epilepsy, and none showed any permanent mental improvement. In most cases, there was more than the usual amount of mental dulness during the first few days of the typhoid, to be followed by some increase in mental activity in the midst of and toward the end of the disease. Didé[16] says that the convulsions are increased in frequency in the very early period of the typhoid.

As respects typhoid, therefore, my experience is very similar to that of most other writers. The effect, temporarily at least, is almost uniformly favorable, but there are exceptional cases in which the influence is negative (Case 6) or in which it is highly unfavorable and even produces status epilepticus (Case 11). One of Clarke's and Sharp's patients, when well along with measles, died of status epilepticus and pneumonia.

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As already mentioned, traumatism is widely recognized as having a profound effect on epilepsy, usually making it better temporarily. I have not, however, found any case in literature in which the fits have ceased, to be followed by a state of constant confusion over a long period of time, as happened in Case 16. I have the record of an additional case in which, in a girl of 27, an accident almost identical with that in Case 16 happened, resulting in a fracture of both ankles. In this girl, the fits ceased for about two months and were succeeded by a state of confusion less well marked than in Case 16, but the previous history of this patient is so meager as not to render it certain that she had not previously had similar attacks even without traumatism.

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[16] Didé: Rev. de méd., Feb. 10, 1899.

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[23] Pearce: The Protean Influence of Pregnancy on Idiopathic Epilepsy, Med. and Surg. Reporter, Jan. 2, 1897.

[24] Putnam: The Relation of Pregnancy to Nervous Diseases, Am. Med. Quart., April, 1900.

Pneumonia, among other acute diseases, is mentioned as causing temporary cessation of fits. In a list of thirty-one epileptics who died of various causes at the Independence State Hospital, and in whom a subsequent autopsy showed croupous pneumonia, I could not find one instance in which it could be absolutely stated that the seizures were less frequent during pneumonia than at other times. On the contrary, there was a clear history of status epilepticus in eleven instances, as occurred in Cases 17 and 18, of which I have only a brief summary of clinical findings to accompany the autopsy records. There were several instances in which no fits occurred during the known period of pneumonia, but this always happened in individuals in whom the seizures were infrequent, and it was impossible to say that they were decreased in number.

How it is that intercurrent diseases can exercise this profound influence on epilepsy is almost as much of a mystery now as when the existence of the relationship was first recognized. It was perhaps but natural that the influence should have been ascribed by many, including Séglas,[12] Toulouse and Marchand,[25] to the fever and the febrile reaction, and favorable results obtained in thyroid feeding have tended to confirm this view. A careful study of cases, however, shows that the degree of improvement in no way corresponds to the height of the fever, and, though the rise in temperature may be a factor, there are certainly other and more important causes at work. The highest temperature recorded in any of my cases was 108, which occurred in Patient 18, who at the time was dying of status epilepticus. The association of high fever, pneumonia, and status epilepticus is certainly a common observation among those who have most to do with the care of epileptics. Friedländer[1] asserts that erysipelas exercises a more powerful and prolonged influence on epilepsy than does typhoid, though the febrile reaction of erysipelas is certainly not so high or so prolonged as of typhoid. Lannois[8] insists that it is not the febrile reaction which induces the change in epilepsy, but the presence of a special poison developed during the course of the intercurrent disease, and this seems the more probable view. It may be that the toxins developed stimulate metabolism—or it may be that in some way the invading toxins awake renewed resistance within the body, possibly in the manner described by Metchnikoff.

Assuming that the intoxication is the proper explanation, numerous attempts have been made by means of artificial inoculation to secure the desired effect, and the results have been uniformly less favorable than in Nature's method. My own most recent attempt was with the Wright method of vaccination. I employed this first with a cataleptic young woman who also had a severe attack of acne. In two days, following the injection of a sterilized staphylococcus culture, there was a very marked mental improvement. The patient got out of bed, walked about, talked fairly intelligently, ate well, and in all respects seemed greatly improved. In two weeks she relapsed completely, and a second and third injection had no mental effect, though the acne disappeared. It is altogether possible, therefore, that the mental change, at the outset, was merely a coincidence. The subsequent use of a typhoid culture in a manic-depressive case, the patient being in a state of depression, was also without effect.

Whether we accept the idea of toxins or of the rise in temperature, however, neither explains satisfactorily the effect of such physiologic processes as pregnancy, nor why typhoid in one person is accompanied by the cessation of seizures, and in another by status epilepticus; nor why pregnancy also can produce absolutely dissimilar effects under apparently similar conditions.

ABSTRACT OF DISCUSSION

Dr. Augustus A. Eshner, Philadelphia: Dr. Weir Mitchell, of Philadelphia, had intended preparing a somewhat elaborate paper on this subject. He had received a number of reports from practitioners in various parts of the country in response to a circular letter, in which experiences were related, showing the inhibitory influence of intercurrent disease on the seizures of epilepsy, and I have gone over the literature for him, most of which has been detailed by Dr. Hamilton. Such an influence, usually temporary, though at times apparently permanent, has been observed since the time of Hippocrates. As Dr. Hamilton has pointed out, therapeutic attempts to control the convulsive seizures by means of the artificial induction of intercurrent disorders, have been made. Scabies has been induced artificially, resulting in a temporary suppression of the seizures of epilepsy. Brown-Séquard in the middle of the last century, noting an analogy between intermittent fever and epilepsy, suggested the development of intermittent fever for the purpose of restraining the seizures of epilepsy. Suggestions of a similar character have been made more recently. Lannois actually employed cultures of staphylococci by inoculation for the purpose of restraining the seizures, and he reports a certain measure of success. After him Marie advised the employment of potassium cantharidinate or some other product of cantharides.

Hessler, an American observer, reported the use of antistreptococcic serum in a series of cases, with good results. Turnowsky has recently reported three cases in which it was believed that permanent recovery from epilepsy was secured as the result of intercurrent pneumonia and scarlet fever respectively, and he seriously advised the exposure of cases of epilepsy to infection with these diseases. Dr. Hamilton has referred to the long list of diseases that appear to exercise an inhibitory influence on epileptic seizures. Typhoid fever has been observed most commonly to exercise such an influence, probably because we see typhoid fever more commonly than any other diseases in epileptics. All infectious diseases, all febrile affections, practically have been noted as exercising an inhibitory effect.

It is well-known that such a result often follows surgical interference undertaken with therapeutic intent. Burns, traumatisms, fractures, the introduction of setons have all exhibited a similar influence. It is difficult to assign an explanation for the influence of intercurrent disease on epilepsy, but Lannois believes that it is due to toxic activity. Dr. Mitchell expressed to me the opinion, and he wished me to voice it at this meeting, that the inhibition is exercised especially in cases in which there is cough. I believe his own observation was made in a case of whooping cough.

Dr. M. L. Perry, Parsons, Kansas: I think it is well to warn those who are inclined to take too hopeful a view of these cases that we should be careful about prognosis. In an experience of six years with epileptics and records of 800 cases we have seen a number of instances where we had temporary relief following various intercurrent diseases, but our records show no case of permanent relief; and it is well to bear in mind that these cases of apparent relief, if they are watched closely, will almost invariably recur, and we have little permanent benefit. I recall but one case of relief of several years' duration, and that was following a severe scald. I do not doubt but that in this case also, the patient being a hemiplegic, there was sooner or later a recurrence. We have had a considerable amount of erysipelas, the usual amount of pneumonia, etc., in our institution, and have noticed their effect in temporarily checking pre-existing epilepsy; but I think we should be very careful in the matter of prognosis, as those cases almost invariably recur.

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[25] Toulouse et Marchand: Influence des maladies infectieuses sur les accès convulsifs épileptiques, Rev. de psychiat., March, 1899, No. 5.

Dr. A. S. Hamilton, Minneapolis: In the time at my disposal it has been impossible to read all of this rather lengthy paper and that may have led to some misapprehension. Certainly it was not my purpose to give the impression that permanent results could be expected from these intercurrent conditions and that has, I think, been pretty clearly pointed out in this paper. These are interesting observations and that is, up to the present time, all they amount to. Nevertheless, it seems to me that anything which is capable of exercising so profound an influence on convulsions as acute febrile disorders have been shown to produce, is worthy of consideration, and it may be that at a future time, a better knowledge of physiologic chemistry will enable us to take advantage of the therapeutic principle here involved.

BLOOD-SMEARS, THEIR PREPARATION AND STAINING

EMERY R. HAYHURST, A.M., M.D.
Resident Physician, Cook County Hospital.
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The following article has been written to promote the greater use of slide blood-smears in diagnosis by pointing out simple methods of making them. The average physician will not make cover-glass smears; he will go without smears first. They are too tedious and difficult to handle. To illustrate the simplicity of the method of making and staining slide smears, let me say that the physicians in the receiving ward of the Cook County Hospital, working two at a time, and diagnosing from 100 to 200 cases daily, find time to make, stain and examine blood-smears by this method to help in differentiating typhoid, malaria, and miliary tuberculosis from occult (septic) pyogenic conditions, measles from scarlet fever, etc.

I wish, in the first place, to describe an excellent technic for making smears preparatory to staining them, which, though not original with me, I cannot find in the literature. It should be described in every textbook on hematology and clinical diagnosis.

Second, I desire to emphasize the fact that special cleansing preparations of slides and the skin surface for making smears are not necessary. This is exactly opposite to statements in text-books; and the time-saving element must appeal to physicians.

Third, I wish to show how to overcome difficulties in using the Harlow stain. Even the slight differences in technic in the method described from other well-known methods are all-important for success. Although not new in its details, the summary here given has been collected from many sources, carefully sifted out, tested by experiment, and the important features only are here dwelt on. Two points of special importance in the method here given are (1) the economy in the use of the Harlow stain, because one main objection is the expensiveness of the absolute alcohol used, and (2) the self-correction and future dependability of the stain.

METHOD OF MAKING SMEARS

A correctly made smear is of as much importance as the stain. To make broad, uniform smears and not to crush or to distort corpuscles and other elements, as well as to secure an even distribution of all the cellular elements, is the object in view. Use a good quality of glass slides, cleaned by breathing on them and rubbing off with a clean, dry, old linen handkerchief. I rarely find that any other preliminary cleansing or preparation of the slides is needed.

Cleansing of the ear-lobe with alcohol or anything else is likewise seldom necessary; certainly the rubbing creates a hyperemia and gets more blood from an anemic ear, but the lobe of the ear is rarely dirty or greasy enough to contaminate the exuding drop of blood. As an antiseptic precaution, cleansing is also unnecessary, since infection in the ear-lobe is a very remote possibility, and the usual cleansing methods are, at all events, superficial. It wastes the physician's time, and, worst of all, if the ear is left the least bit moist from solutions used, the blood-drop diffuses over the surface of the skin instead of standing up like a bead; the corpuscles are laked or agglutinated; and the resulting smear is worthless. Many physicians are inclined to blame the stain, when the whole trouble lies in the smear. Dropping the needle, or blood instrument, into alcohol after puncturing the ear is commendable, since it may preclude transference of a bacteriemia or contagion from one patient to another.

Probably the best mode of procedure to make slide smears is as follows:

Have two clean slides, A and B, ready. Stick the ear-lobe with a Hagedorn or similar cutting needle. No blood appears, as a rule, until gentle pressure is applied to the lobe. Touch center of slide A to the rounded drop of blood which exudes. Do not press the slide against the skin surface. Now grasp the right end of slide A, with blood drop on top, between thumb and fingers of left hand (palm of hand upward), and hold slide horizontally with its left end directed obliquely away from the body and projecting two-thirds its length over the radial border of the hand. Take slide B in right hand, apply one end to farther edge of drop and pull B back toward you about one-eighth of an inch. This is to make the drop spread by contact sidewise in the acute angle formed between the slides. Next, holding slide B in place, pull slide A steadily backward beneath it and toward your right until the slides slip past one another. The blood-cells adhere to the moving horizontal surface of slide A and fall off from the posterior surface of slide B in a smooth even sheet, uncrushed—in fact, untouched. Dry at once by shaking vigorously in the air. Thus one smear is made on slide A. Slide B may be smeared in exactly the same manner, using the end of slide A for contact. Stain as soon as convenient. Take care that flies do not walk over the surface of the dried smear or the corpuscles will disappear like magic.

It requires much less time to make the smears than the written description of the method would imply, and after a little practice one can make smears with great dexterity and accuracy. Do not use too large a drop of blood. One that does not spread quite to the edges of the slide is best, for then the leucocytes will not collect along the edges of the smear. In making the second smear and all subsequent ones, use a perfectly fresh drop of blood, not the drop that has exuded by itself during the preparation of the previous smear. Smears of other body fluids are made similarly.

DIRECTIONS FOR STAINING IN BRIEF

Use the Harlow[1] (Skelton[2]) stain. The two staining solutions are kept separate, each in a three-ounce, wide-mouthed bottle. 1. Drop the smear, air-dried, but without other fixation, into the eosin stain twenty seconds. 2. Remove, drain an instant against the mouth of the bottle, drop directly into the methylene blue stain twenty seconds. 3. Remove, drain as above, wash rapidly to and fro in a tumbler of tap-water, then shake off the excess of water and blot dry between two folds of filter-paper.

This technic applies to the Harlow stain the principles commonly used in the laboratory for staining sections and smears with ordinary stains, the chief distinctions being the absence of previous fixation or hardening; staining under cover (i. e., the bottles are kept stoppered while staining); there is no washing between stains; and some of the first stain is carried by the smear directly over into the stock solution of the second.

The specimen is ready for examination. The total time spent in staining is less than one minute. Everything is stained—red cells, white cells, the three types of granules, blood-plates, malarial organisms, bacteria, etc., equal to the lithographed plates in text-books. Pleural effusions, ascitic fluids, spinal fluids, pus-smears and similar smears are advantageously stained by this method, since stray red corpuscles which may get into the smear are at once identified by their red stain, whereas lymphocytes, leucocytes, pus cells, mucus, bacteria, etc., show blue.

ADVANTAGES OF METHOD

In a former article[2] I laid stress on the usefulness of blood-smears in general diagnosis and on a special method for using the Harlow stain for cover-glass smears, as well as the many advantages of the stain, and method of staining, as compared with Wright's and others. I prefer the old Ehrlich cover-glass smears for reasons there stated, but the ease with which slide smears are made and stained by the above method deserves special recommendation to busy practitioners.

The method of staining as given above is exceptionally convenient. It will be observed that there is no handling or pouring of the stains at all, no pipettes used, no dilutions on the slide, no special apparatus, preparation, or mixing of stains beforehand, no previous fixation of smears, no soiling of the fingers, table, or aught else, while ordinary tap-water suffices to wash off the excess stain. There is no fear of overstaining should the smear be left in either of the staining solutions; but usually twenty seconds is the minimum time required. With the bottles mentioned, each about half full of stain, the upper end of the glass slide projects well up toward the mouth of the bottle, where it is easily grasped by the thumb and finger. Forceps are unnecessary. The bottles must be kept stoppered at all times, even while staining, and opened only when introducing or transferring the smear. This is to protect the alcohol from evaporation, and to prevent the absorption of atmospheric moisture, and the precipitation of the stains on the surface of the smear. Glass-stoppered bottles are preferable, but corks dipped in melted paraffin will suffice. While staining, the upper end of the slide should be kept clean and dry throughout, so that the fingers need never be soiled.

The 50 c.c. or so of stain in each bottle will keep indefinitely, will stain hundreds of smears, and the liquid is practically never used up, since none is ever thrown away. When the stain gets a little low in the bottles a little more alcohol should be added. When not in use the bottles should be kept carefully stoppered and away from the direct light. An ordinary crayon-box or square cigar-box will answer very well, offering enough room for bottles, filter-paper, slides, etc.

METHOD OF PREPARING STAINING SOLUTIONS

For the sake of completeness the exact method of preparing the staining solutions is here given:

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STAINING TECHNIC AND STAIN CORRECTIONS

On a moment's reflection it is clear that any failure to obtain results in staining a properly made smear must come under one of the four following heads:

1. *Technic of Staining.*—As this consists simply in standing the two stain solutions and a tumbler of water in a row and dropping the smear into each in turn, a mistake here seems improbable. But you must follow directions specifically. Do not try to wash off the excess of methylene blue under the tap—the driving force of the water will take out almost every trace of the blue. There is no occasion to hurry through any of the steps in staining until you come to the washing. This must be done rapidly, but thoroughly enough to rinse off all floating blue stain from the slide. Remember that the blue comes out rapidly and in direct proportion to the time spent in washing. The red stain is removed much more slowly. Three or four quick swashes back and forth should wash it thoroughly. Then with one fling shake the excess water on the floor, touch the lower end of the slide to filter-paper to catch the last drop of water, and finish by blotting dry between two folds of filter-paper, holding the slide and filter-paper carefully in place with left hand while rubbing heavily with the right. The slide should have a pink-red appearance to the naked eye, if the smear is of blood. Use the stains always in the sequence given: red, first; blue, second. Carrying a little of the eosin on the slide into the methylene blue seems to be the main factor in preventing the deterioration of the stain by age.[3] When, by mistake, a little of the methylene blue is carried into the eosin a permanent cloudy precipitate forms in the latter, but apparently not to any real detriment.

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ing method a too decidedly alkaline (deep blue) stain results, so that the red cells have a purple or blue tinge instead of the normal pink. Old stains, which have been little used, may take on this tendency. This is doubtless due to a slowly soluble alkaline impurity in the dye or dissolved out of the glass in the bottles. It is easily corrected (see below). With more use the transferred eosin, being acid, will eventually correct it, too.

4. *Methyl Alcohol.*—This is the factor most often at fault. I have always used alcohol recently imported for institutional use and, therefore, fresh. If fresh it is neutral in reaction. Old alcohol may become acid because of the presence of moisture, which, with room temperature and exposure to light, permits slow oxidation of the methyl alcohol to formic aldehyd and finally formic acid. Alcohol obtained through jobbers and supply houses in this country may show this metamorphosis. Peebles and Harlow,[4] however, after calling attention specifically to this defect, have shown how to correct it. In brief, should the stained smear "fail to show any blue," add a drop of strong alkali (20 per cent. potassium hydroxid) to the bottle of methylene blue solution; should it be stained "too blue," with the red cells purple, add a drop of glacial acetic acid to the methylene blue. I find this works admirably. The eosin solution never requires correction—just the methylene blue. Thus the intensity of either stain in a smear, being strictly a question of chemical reaction in the methylene blue solution, is absolutely under control.

As is well known, different bloods vary in the degree of alkalinity they possess. With a given stain properly corrected the normal blood shows only a pale blue nuclear stain, whereas a stain from a case of pneumonia takes an intense dark blue nuclear stain. The red cells are stained red, the depth of red and its distribution depending on the amount and distribution of the hemoglobin. Should the latter show a purple tinge, the blue stain is too alkaline and should be corrected. The granules in the leucocytes are invariably stained (neutrophilic, eosinophilic, basophilic) regardless of slight differences in the chemical reaction of the stain. In order to have perfect stains of all blood conditions it may be well to have two methylene blue solutions, the one made purposely more alkaline than the other. T[illegible]a smear in each. My observation is that any [illegible] which will stain a normal blood so as to show [illegible] erythrocytes, and pale blue nuclei in [illegible] nuclears, suffices for a[illegible] in most of the pathologic conditions [illegible] tion is greater, and the contrasts more marked.

11/16/09.
M. 12-cord.
M. 14 intracerebral.

SUMMARY

1. Satisfactory blood-smears may be made by following specific directions.
2. The Harlow stain for blood-smears is utilized in a one-minute method so that it "stains everything" with perfect satisfaction.
3. The method is simple, convenient, and dependable.
4. The physician prepares his own stains to start with.
5. The stain solutions are always ready and keep indefinitely.
6. The stain and method of staining are recommended for dried smears of all kinds.
7. Peebles and Harlow's observations on corrections of faulty eosin-methylene blue stains render control practically absolute.

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[4] Peebles, A. R., and Harlow, W. R.: Clinical Observations on Blood-Stains, The Journal A. M. A., March 6, 1909, lii, 768-769.

Clinical Notes

INTRAMEDULLARY TUBERCULOMA REMOVED AT THE LEVEL OF THE FIFTH THORACIC SEGMENT OF THE SPINAL CORD

NOTE ON BEHAVIOR OF THE CEREBROSPINAL FLUID *

WILLIAM C. KRAUSS,† M.D.
Neurologist to the Buffalo General Hospital

WITH SURGICAL REPORT

By EDWARD R. McGUIRE, M.D.
Associate Surgeon, Buffalo General Hospital
BUFFALO, N. Y.

Patient.—A. G., aged 36, American, a wood-working machine hand, entered Buffalo General Hospital, Dec. 26, 1907, complaining of general weakness and pain in the left side of chest.

History.—His father died of old age at 82; mother is living and well at 65. He has five brothers and three sisters living and well. One brother died of typhoid fever at 44. There was no family history of tuberculosis, cancer or rheumatism. Patient had three children living and well; wife had had no miscarriages. Patient had had measles, mumps and whooping cough in childhood and had typhoid fever in 1892; was sick in bed about four weeks. Had influenza in spring of 1907 and a slight attack of pleurisy in summer of 1907. Since that time had been unable to do anything, because of general weakness and pain in various parts of body. Had been hard of hearing in right ear since having had influenza, health being good up to that time. Six or seven years ago patient had an operation for what was probably an hydrocele of left testicle. Last spring the right one began to be similarly affected. About one month before he was seen the left one again seemed to be enlarging. He denied all venereal history. His normal weight was from 135 to 140 pounds. One month before he was seen he weighed 117 pounds. Most of his weight had been lost since early in the summer of 1907. Smoked and chewed tobacco and drank moderately.

Present Illness.—Since about Dec. 1, 1907, patient had been growing markedly weaker. He had pain in left chest, especially when lying down and on deep inspiration. During past summer patient had frequent night sweats, and since Dec. 1, 1907, he had had profuse night sweats every night. Had no special cough. Bowels were constipated; during the two weeks before he was seen nothing but an enema proved successful.

Examination.—This showed a fairly well developed but poorly nourished man. Pupils reacted normally. Tongue coated with grayish fur. Chest showed poor expansion throughout; less on right in supra- and infraclavicular regions. The heart [illegible] normal in size and position. Patellar reflexes were exag[illegible] ankle clonus and Babinski sign present.

11/16/0
M. 55-co
M. 14 in-
tracerebr

[illegible]cember 27, 1907: On right side in suprascapular re[illegible] breathing was bronchial in quality; in the infrascapular, it was exaggerated. Epididymis on each side was very hard and large. Glands in groin were somewhat enlarged, also along Scarpa's triangle. Suggestion of ankle clonus; knee-jerk quick. Some crepitus in left knee-joint on flexion; less in right knee.

December 29, 1907: Blood examination showed: hemoglobin, 85 per cent.; red corpuscles, 5,080,000; white corpuscles, 7,200; differential polymorphonuclears, 75 per cent.; large lymphocytes, 5.5 per cent.; small lymphocytes, 14.5 per cent.; eosinophiles, 3 per cent.; basophiles, 2 per cent.

January 3, 1908: Fluoroscopic examination showed two distinct areas of shadow in the left chest. Right chest was clear. Left chest was slightly darker over upper lobe than on the right side same point. Patient returned to his home unimproved after a period of two weeks. The bowel movements became involuntary. A few days later he lost control of the bladder, and the urine passed involuntarily. The legs became suddenly weaker, and the pain in the lower part of the body and right leg increased in severity. He was seen by Dr. E. R.

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* Read at the meeting of the Eighth District Branch of the Medical Society of the State of New York, held at Batavia, N. Y.

† Dr. Krauss died September 21, after this paper was accepted for publication.

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THE TRANSMISSION OF EPIDEMIC POLIOMYELITIS TO MONKEYS

A FURTHER NOTE *

SIMON FLEXNER, M.D., AND PAUL A. LEWIS, M.D.
NEW YORK

In a previous communication[1] we presented in the form of a chart the results secured up to that time in producing poliomyelitis in monkeys by injecting intracerebrally a virus, denominated M.A., obtained from the spinal cord of a child suffering from epidemic infantile paralysis. The virus had been passed successively through three generations of monkeys and is still being transmitted.

We desire in this communication to present the results in the form of a chart[2] obtained up to this time with the second virus, denominated K. It is, in our opinion, desirable that the facts thus far secured relating to this virus be published, since they extend considerably the previous observations.

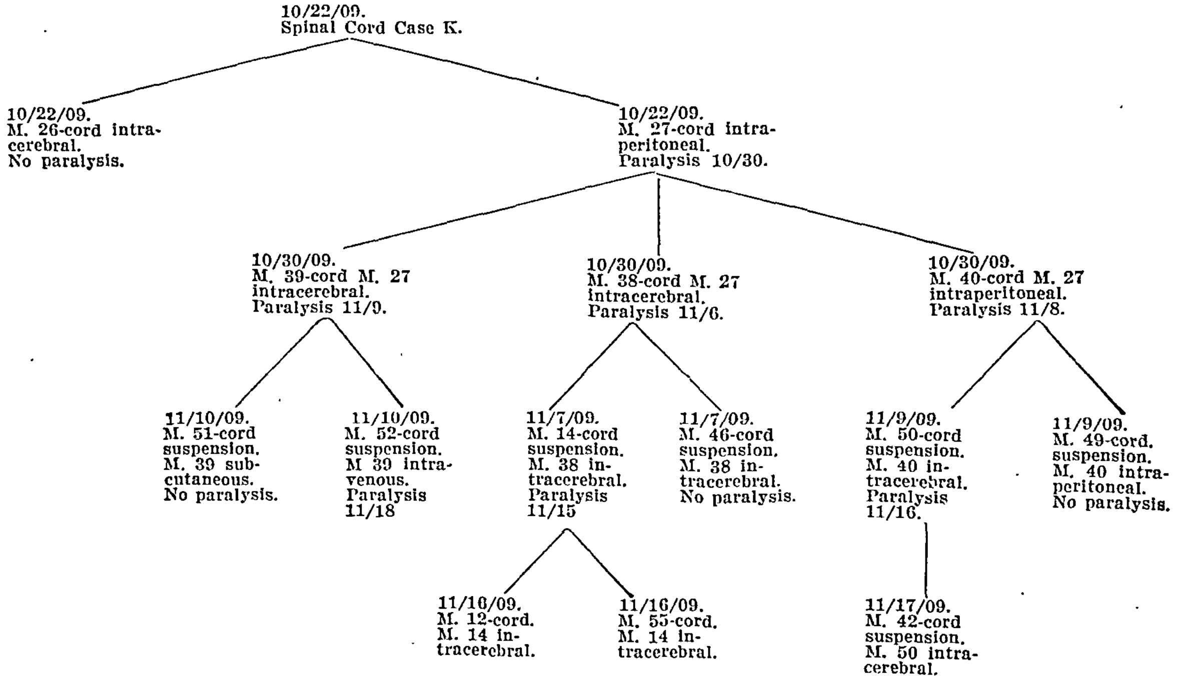
In the first place, it can now be affirmed that the virus of poliomyelitis cannot be very difficult of transmission to monkeys under the conditions leading to the development of the lesions and symptoms characteristic of epidemic poliomyelitis in man, since both specimens of human cord furnishing the original virus have sufficed for the transmission of the disease successively.

In the next place, it can now be stated that it is not absolutely essential that the virus be introduced into the brain, but that successive transmission is possible by way of the peritoneal cavity (Monkeys 27 and 40), by intravascular injection (Monkey 52), and by intraneural injection (Monkey 16). The lesions in the monkey in which the virus was introduced into the sheath of the sciatic nerve developed first on the side inoculated and later extended to the opposite side of the spinal cord.

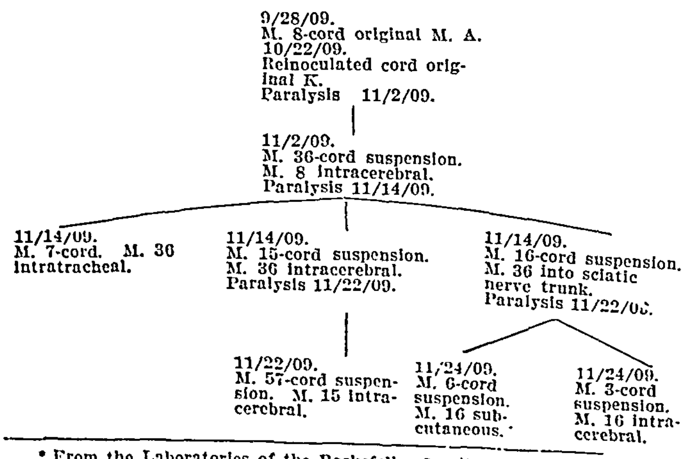
On the other hand, it cannot yet be affirmed that still other avenues do not exist for the entrance of the virus into the central nervous system. Additional observations are required and are, indeed, in process of being made, before the statement can be ventured that infection does not occur by way of the skin, the respiratory passages and the digestive tract.

The conclusions to be drawn from the experiments related are to the effect that the virus of epidemic poliomyelitis is readily transmissible from man to monkeys and from monkey to monkey, by way of the brain, the peritoneal cavity and the circulation, and that, however transmitted successfully, it becomes established in the spinal cord and medulla, where it sets up characteristic lesions which are followed by equally characteristic effects that exhibit themselves as the usual symptoms of infantile paralysis in human beings.

Moreover, it can now be stated that this experimental form of poliomyelitis in monkeys is a severe and very often a fatal disease, and when recovery from the disease takes place there persist residues of paralysis which resemble the paralytic effects also persisting in human subjects of poliomyelitis.


10/22/09. Spinal Cord Case K.
10/22/09. M. 26-cord intracerebral. No paralysis.
10/22/09. M. 27-cord intraperitoneal. Paralysis 10/30.
10/30/09. M. 39-cord M. 27 intracerebral. Paralysis 11/9.
10/30/09. M. 38-cord M. 27 intracerebral. Paralysis 11/6.
10/30/09. M. 40-cord M. 27 intraperitoneal. Paralysis 11/8.
11/10/09. M. 51-cord suspension. M. 39 subcutaneous. No paralysis.
11/10/09. M. 52-cord suspension. M 39 intravenous. Paralysis 11/18
11/7/09. M. 14-cord suspension. M. 38 intracerebral. Paralysis 11/15
11/7/09. M. 46-cord suspension. M. 38 intracerebral. No paralysis.
11/9/09. M. 50-cord suspension. M. 40 intracerebral. Paralysis 11/16.
11/9/09. M. 49-cord. suspension. M. 40 intraperitoneal. No paralysis.
11/16/09. M. 12-cord. M. 14 intracerebral.
11/16/09. M. 55-cord. M. 14 intracerebral.
11/17/09. M. 42-cord suspension. M. 50 intracerebral. Paralysis 11/22.

VIRUS K 8 (M. A.)


9/28/09. M. 8-cord original M. A. 10/22/09. Reinoculated cord original K. Paralysis 11/2/09.
11/2/09. M. 36-cord suspension. M. 8 intracerebral. Paralysis 11/14/09.
11/14/09. M. 7-cord. M. 36 intratracheal.
11/14/09. M. 15-cord suspension. M. 36 intracerebral. Paralysis 11/22/09.
11/14/09. M. 16-cord suspension. M. 36 into sciatic nerve trunk. Paralysis 11/22/09.
11/22/09. M. 57-cord suspension. M. 15 intracerebral.
11/24/09. M. 6-cord suspension. M. 16 subcutaneous.
11/24/09. M. 3-cord suspension. M. 16 intracerebral.

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* From the Laboratories of the Rockefeller Institute for Medical Research.

[1] THE JOURNAL A. M. A., Nov. 13, 1909, liii, 1639.

[2] In the chart M. signifies monkey.

McGuire early in March, who suspected spinal cord tumor, and induced him to re-enter the Hospital March 4, 1908.

March 5, 1908: At Dr. McGuire's request I examined the patient and found him pale, weak, emaciated, lying on his right side, complaining of a great deal of pain over the chest, especially the left side, which had defied all manner of treatment for many months. Movement of the body did not seem to aggravate the severity of the pain, and patient was as comfortable on his left side or back as on his right side. Inspection showed the legs drawn up, flexed at the thighs and knee joints, and atrophied to a very marked degree; there was no difference in measurements between the right and left leg—both were practically reduced to skin and bones. The muscles of the arms, however, were quite well preserved, and not wasted to the extreme which characterized the lower extremities. Some slight degree of stiffness bordering on contracture was present in the legs. The abdomen was flattened; urine and feces were passing involuntarily. No bed sores were present. Testing the muscular strength of the legs gave an absolute negative result. No motion of any kind could be detected from the chest caudad whatever. The patellar tendon reflexes were slightly exaggerated; ankle clonus was slightly exaggerated; patellar clonus was absent; Babinski's reflex and plantar reflexes were slightly present on both sides; the cremasteric and abdominal reflexes were absent. Testing the skin for sensation revealed an anesthesia complete for all forms caudad of the intermammillary line. The ventral level was quite sharply defined, but the dorsal level was marked by a zone of 1½ inches in width, in which the differentiation was less marked. In this zone of uncertainty the patient would be unable to distinguish between sharp and dull objects; would give contradictory answers, and on successive examinations would interchange the anesthetic, hypesthetic and normal areas. Examination of the spinal column elicited by deep pressure a sensitive area over the third to fourth thoracic spinous processes. No deflection or deformity of the spinal column could be detected. On his first stay in the hospital, the temperature on three occasions rose above normal; the pulse ranged from 80 to 90, while the respirations continued 20. Urinary examinations showed absence of albumin and sugar, normal specific gravity, and an occasional leucocyte and granular cast. On the second stay at the hospital, the temperature rose above 100 F. on two occasions, and the pulse ranged from 90 to 100.

Reviewing the clinical history of this case, we have a man without any tuberculous or specific history, attacked by influenza in the spring of 1907, and followed by a weakening of the whole body, pain[illegible] and a slight attack of pleurisy in the s[illegible]cial apparatus, the testicles became involved, he began to[illegible]hand, no pre- and in December, 1907, the process see[illegible]ers, table, with increasing vigor. With continuou[illegible] to wash of the legs advanced to such a degree th[illegible] staining to enter a hospital. A very careful ex[illegible]ing solu- chest by an experienced clinician revea[illegible]berculous process in the left lung, which was verifi[illegible] the radiograph. All attention was paid to the thoracic contents, and as the pain and weakness and loss of weight could be attributed to the chest lesion, no attention was paid to such symptoms as "marked constipation, patellar reflexes exaggerated, ankle clonus and Babinski present."

Returning home, the symptoms of cord disease advanced much more rapidly than the chest symptoms; bladder disturbances, rapid loss in strength, increasing weakness of the legs even to complete paralysis, exaggerated deep reflexes and absence of the superficial reflexes, all pointed to a slowly increasing intraspinal pressure; the zone or level of anesthesia at the height of the intermammillary line, and the area of sensitiveness over the third and fourth spinous processes spoke for a lesion at the level of fifth thoracic segment. Although the patient was not in a very favorable condition for an operation, his relatives were very favorably inclined, and the patient most desirous for any kind of relief. A laminectomy was agreed on at the earliest moment.

SURGICAL REPORT BY DR. E. R. M'GUIRE

The patient was told of his desperate condition, and little if any hope was given him of recovery. He requested to have something done, however, even with so slight a prospect of success. March 10, 1908, an incision was made from the first to the seventh dorsal vertebra. The muscular attachments were easily separated with comparatively slight oozing. The second, third, fourth and fifth spinous processes were removed with a rongeur forceps, and the canal opened at the fifth spinous process with hammer and chisel. Then with a Doyen forceps the canal was opened from the fifth to the second thoracic spinous process. The dura appeared normal and even palpitation of the cord revealed no evidence of tumor. On opening the dura, the pia appeared dull and of a different consistency at the second dorsal spine. Closer inspection showed a distinct tumor formation involving the greater part of the interior of the cord. With the blunt end of a dressing forceps, the tumor was shelled out with perfect ease. There was very little hemorrhage at any time. After removal of the tumor there was a small section of the cord still intact. The pia and dura were sutured with plain catgut, and the external wound closed with thread, without drainage. The patient left the table in very poor condition. Continuous salt solution per rectum was immediately started, also a subcutaneous injection of 300 c.c. of salt solution containing 0.6 per cent. of adrenalin chlorid. The patient failed to rally, and died one hour later. Permission to reopen the wound was obtained, and the cord was removed and sent to Dr. Burton T. Simpson for examination.

Pathologic Report by Dr. Simpson: The tumor, as received at the laboratory, was 2 cm. by 1.5 cm. (¾ in. by ⅝ in.) in size, of very firm consistency. Cut section showed a glistening white homogeneous surface. Microscopically, the periphery showed numerous giant cells, while the central part was composed of a dense fibrous tissue. Section stained with carbolfuchsin showed a few tubercle bacilli. A section of the cord, at the area where the tumor laid, showed the cord structure completely destroyed, while a section taken about 5 cm. (2 in.) below showed complete degeneration of both ascending and descending tracts. Microscopic diagnosis of the tumor is given as tuberculoma.

This case is unusual in that an intramedullary tuberculoma could exist without producing dissociation of sensation. Repeated examinations were made to test sensation, but patient's answers were always the same.

A phenomenon which I observed during the course of the operation may be of some service in locating the sit-filter-p[illegible] of the tumor after the dura has been exposed, in place[illegible] the tumor is intradural, or intramedullary. right. The slide[illegible]ulk of the cord produced by an intra- the naked eye, if the smear is of [illegible] will completely occlude always in the sequence given: [illegible]upt the passage or flow or the [illegible] fluid. There will result a damming back of the cerebrospinal fluid cephalad of the constriction and an increased tension will follow. Caudad of the constriction (tumor) the cerebrospinal fluid will be diminished in tension, owing to the cutting off of the normal tension and circulation. Incising the dura cephalad of the tumor will cause a spurting of the cerebrospinal fluid, a jet being projected from several inches to a foot or more in height, according to the tension or force of the fluid; while caudad of the tumor, an incision into the dura will cause only a welling out of the fluid from the aperture, flooding the field of the operation without any force or tension. Observing the behavior of the fluid, the surgeon will know whether he is cephalad or caudad of the tumor, and can make his incision accordingly.

This phenomenon has been observed several times at the Buffalo General Hospital, and it is believed that it has some significance and value in detecting the situation of intradural tumors after exposure of the dura.

479 Delaware avenue.

THE TRANSMISSION OF EPIDEMIC POLIOMYELITIS TO MONKEYS

A FURTHER NOTE *

SIMON FLEXNER, M.D., and PAUL A. LEWIS, M.D.
NEW YORK

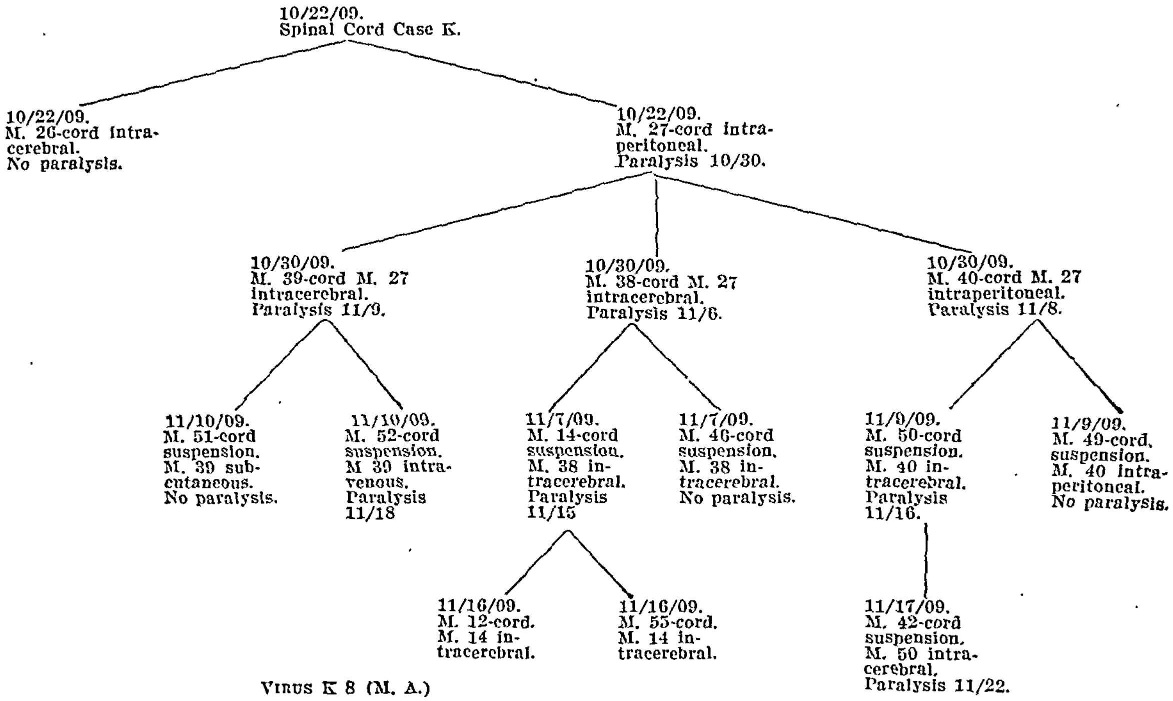
In a previous communication[1] we presented in the form of a chart the results secured up to that time in producing poliomyelitis in monkeys by injecting intracerebrally a virus, denominated M.A., obtained from the spinal cord of a child suffering from epidemic infantile paralysis. The virus had been passed successively through three generations of monkeys and is still being transmitted.

We desire in this communication to present the results in the form of a chart[2] obtained up to this time with the second virus, denominated K. It is, in our opinion, desirable that the facts thus far secured relating to this virus be published, since they extend considerably the previous observations.

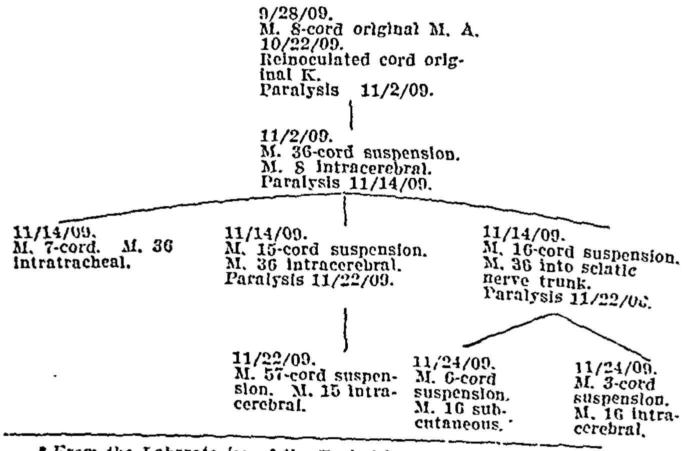
In the first place, it can now be affirmed that the virus of poliomyelitis *cannot be very difficult of transmission* to monkeys under the conditions leading to the development of the lesions and symptoms characteristic of epidemic poliomyelitis in man, since both specimens of human cord furnishing the original virus have sufficed for the transmission of the disease successively.

In the next place, it can now be stated that it is not absolutely essential that the virus be introduced into the brain, but that successive transmission is possible by way of the peritoneal cavity (Monkeys 27 and 40), by intravascular injection (Monkey 52), and by intraneural injection (Monkey 16). The lesions in the monkey in which the virus was introduced into the sheath of the sciatic nerve developed first on the side inoculated and later extended to the opposite side of the spinal cord.

On the other hand, it cannot yet be affirmed that still other avenues do not exist for the entrance of the virus into the central nervous system. Additional observations are required and are, indeed, in process of being made, before the statement can be ventured that infection does not occur by way of the skin, the respiratory passages and the digestive tract.



Virus K 8 (M. A.)



The conclusions to be drawn from the experiments related are to the effect that the virus of epidemic poliomyelitis is readily transmissible from man to monkeys and from monkey to monkey, by way of the brain, the peritoneal cavity and the circulation, and that, however transmitted successfully, it becomes established in the spinal cord and medulla, where it sets up characteristic lesions which are followed by equally characteristic effects that exhibit themselves as the usual symptoms of infantile paralysis in human beings.

Moreover, it can now be stated that this experimental form of poliomyelitis in monkeys is a severe and very often a fatal disease, and when recovery from the disease takes place there persist residues of paralysis which resemble the paralytic effects also persisting in human subjects of poliomyelitis.

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* From the Laboratories of the Rockefeller Institute for Medical Research.

[1] The Journal A. M. A., Nov. 13, 1909, liii, 1639.

[2] In the chart M. signifies monkey.

THE SUBMUCOUS RESECTION OF THE NASAL SEPTUM

A RASPATORY FOR THE AVOIDANCE OF PERFORATIONS

OTTO T. FREER, M.D.
CHICAGO

Perforations in the course of submucous resections of *deflections of the nasal septum are, in my experience,* oftenest made during the denudation or excision of the bony part of the deflection after the removal of its cartilaginous portion. Nearly all of these perforations occur in baring the so-called ridge of its periosteal coverings, the term "ridge" being used to describe the bony wall which, arising from the nasal floor, forms the base of the septal skeleton and is composed of the incisor crest, anterior end of the vomer and superior maxillary crest. The ridge may be so low that it is barely indicated, or it may form a bony partition whose height may even reach five-eighths of an inch. When the septum is deflected into one or the other nostril, the ridge bends over into the naris of the convexity of the deviation in a varying degree, so that in extreme cases it may lie almost flat on the nasal floor. The periosteum covering the ridge is commonly firm, thick and vascular and envelops its upper border, crossing over it into the other nostril. The periosteal envelope of the ridge is, *therefore,* distinct from the perichondrial envelope of the cartilage of the septum, but perichondrium blends with periosteum along the top of the ridge, which thus marks the place where both perichondrium and periosteum of one side are continuous with *these membranes on the other side of* the septum. For this reason, after the removal of the cartilaginous deflection, the upper boundary of the ridge is not seen as bare bone, but is usually invisible under its covering of periosteum and has to be found by feeling with a probe. Observation has shown me that the difficulty so created in finding the ridge and resecting it, thus buried in adherent fibrous coverings, has made many operators afraid to touch it, so that they content themselves with merely removing the cartilaginous part of the deflection. Such neglect to take away the ridge is, in my experience, nearly always the cause of an imperfect clearing of the obstructed nostril. In several instances, when the space gained by a cartilaginous resection seemed sufficient, I have had to remove the ridge in a later operation, and I have known other surgeons to have the same experience. Even when it merely *takes up space* because of excessive thickness and is hardly bent over, the ridge should always be removed, as the breathing-space thus obtained is of the greatest advantage to the patient.

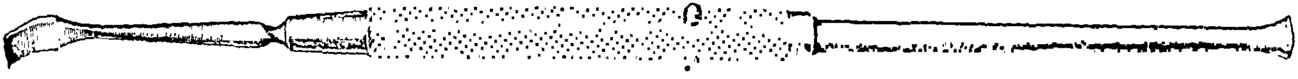

Fig. 1.—Raspatory for the denudation of bony deflections of the nasal septum.

The perforations referred to are made along the upper limit of the ridge, the operator, after successfully removing the cartilaginous deflection, tearing or cutting his way into the other nostril in attempting to free the bone from its periosteum along the upper border of the ridge and on the side of it which lies in the naris of the concavity of the deflection, the perforation occurring so easily that the surgeon does not know that he has made it until he looks through it into the other nostril. As *the upper boundary of the ridge represents* the bottom of the groove of the concavity, the perforation is seen in this bottom, when looking into the nostril containing the hollow of the deflection. The mucous membrane seems to tear with especial readiness in this region, so that *what seems a mere slit at first usually becomes a large* hole when the ridge is resected. While I succeeded in avoiding perforations in all but the rarest cases in this region in my earlier work, I never felt entirely sure that one would not be made until I began to bare the ridge with the little raspatory here described, which gives me a feeling of security in preparing the bony deflection for resection that I never had before I began to use it. This raspatory (Fig. 1) is a small chisel-edged instrument whose blade is curved on the flat, and has a front and lateral cutting edges.

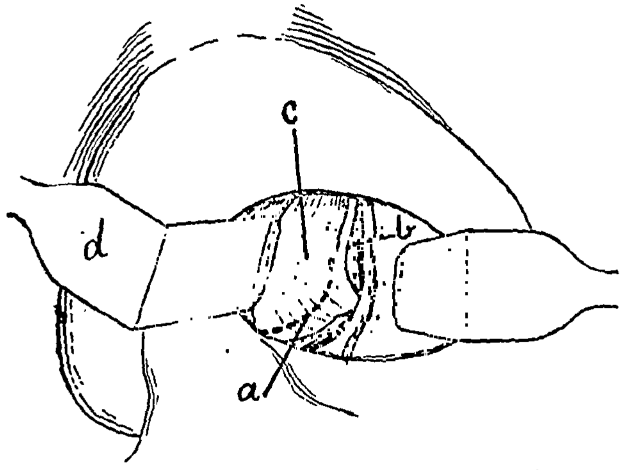

Fig. 2.—The left nostril, held open with retractors; the dotted line, a, shows the *incision which splits the periosteum along the* upper border of the "ridge;" b, cut edge of the uplifted mucous covering of the posterior part of the deflection; c, the mucous membrane of the opposite nostril (naris of the concavity of the deflection) uncovered by the removal of the cartilage; the retractor (d) holds the anterior (reversed L) flap forward.

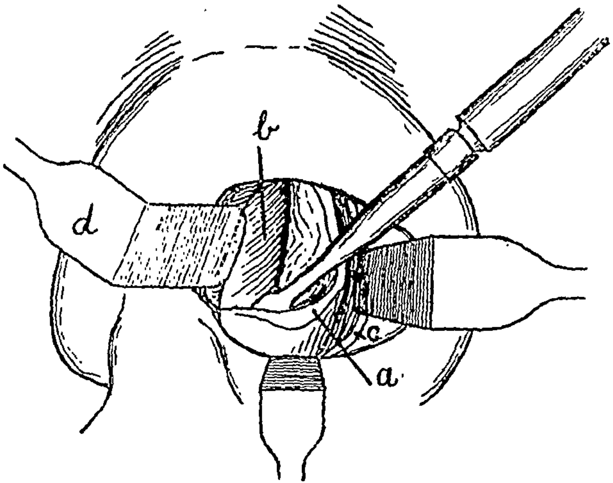

Fig. 3.—The left nostril held open with retractors; the entire bony deflection including the "ridge," a, has been bared of its *coverings by the raspatory, which may be seen working* toward the nasal floor on the concave side of the deflection; b, mucous membrane of the opposite nostril uncovered by the removal of the cartilage and uplifted from the bony deflection; c, cut edge of the uplifted covering of the posterior part of the deflection held away with a long retractor; d, retractor holding forward the anterior (reversed L) flap.

It is used in the following manner: After finding the upper boundary of the ridge with a dull elevator, the periosteum is split along this boundary from behind forward (Fig. 2) with a small round-edged knife of my set[1] designated by the capital letter E. The raspatory (Fig. 3) is then grasped firmly, close to its cutting end, so that it may not slip, and the periosteum is scraped away from the bone with it on the side of the convexity of the deflection. Then the denudation of the side of the ridge in the naris of the concavity is begun. Often the upper border of the ridge is found surmounted by a strip of cartilage contained in the periosteum envelope of the ridge, not the envelope of the cartilage of the septum, and this cartilage has to be scraped away with the raspatory from the ridge before the upper boundary of the bone can be found. Then the raspatory is made to work its way cautiously over the top of this boundary and down the other side of the ridge into the naris of the concavity until the bone is bared to the nasal floor (Fig. 3). In performing this denudation the instrument is held so that its long diameter is nearly across the direction of the ridge. After the incisor crest and anterior portion of the ridge are thoroughly denuded to the nasal floor, the raspatory is directed backward into the concavity of the bony deviation formed by the meeting of the deflected perpendicular plate of the ethmoid bone above and the vomer below, the angle made in bony deflections by the junction of these two bones forming a horizontally placed bony V, described by me in previous articles. The advantage of the raspatory over the ordinary sharp and blunt elevator in denuding the bone lies in the constant contact of the cutting edge with the bony surface, so that plunging or unexpected cutting through the coverings by the instrument is avoided, while in distinction to this, the elevator is inclined to leave the bony surface at some point, especially in hollowed places, and so is liable to cut through the mucous membrane.

34 Washington Street.

THE PRESENCE OF TUBERCLE BACILLI IN THE CIRCULATING BLOOD *

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AND
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It has been known since the early days of bacteriology that tubercle bacilli are occasionally found in the circulating blood of patients suffering with tuberculosis. It is probable that every case of advancing tuberculosis is, at some stage of the disease, a bacteriemia; at least, there are times during the progress of every case in which tubercle bacilli can be found in the blood. This has been demonstrated by experiments and is also shown by those cases of miliary tuberculosis in which every organ of the body becomes simultaneously the seat of numerous tubercles.

The question was studied experimentally many years ago by Nocard, Bang, and others in an attempt to discover whether or not the flesh of animals suffering with tuberculosis was dangerous as food. The experiments carried out at that time showed that tubercle bacilli, although introduced directly into the circulation in large numbers, are in a very short time filtered out from the blood. It is universally believed that this action takes place in the lung, of which there is much experimental proof, because the muscular tissue is found free from bacteria, which could not be the case if it took place in these tissues, or if the blood still contained the germs. Much interest was caused, therefore, when in the fall of last year Dr. Rosenberger announced that tuberculosis was always a bacteriemia before it became localized in the various organs of the body, and that bacilli could be demonstrated in the blood by a very simple procedure. His method consisted in drawing from .5 to 10 c.c. of blood into a citrate solution in an ordinary test-tube, which was then placed in an ice-box for twenty-four hours, and the sediment examined without centrifugation. The ordinary stains were used, although Dr. Rosenberger recommended Pappenheim's stain as a decolorizer. In his first paper he speaks of the large number of tubercle bacilli which are sometimes found in a single field. This at once excited skepticism in the minds of many, as it seemed improbable that such masses of bacteria could pass through the capillaries. The alleged discovery was of such vast importance that it merited careful investigation.

Through the kindness of Dr. J. W. Coon, superintendent of the Wisconsin State Tuberculosis Sanatorium at Wales, we were allowed to obtain specimens of blood from a number of the patients known to be suffering with tuberculosis. At our first visit we drew specimens from eighteen patients, following Rosenberger's methods throughout exactly. After allowing the specimens to stand in the ice-chest for twenty-four hours we made smears from the sediment and stained and examined them. We then took the remainder of the blood and put it in a powerful centrifugal machine, and again made smears from the sediment. In all eighteen cases our results were absolutely negative by both methods. It will be observed that our second method, namely, examining smears after centrifugating 10 c.c. of blood, gave us a very much better chance of discovering any tubercle bacilli which may have been in the blood than the former method. We had intended pursuing the experiments on a larger number of patients, but private advices from several laboratories giving results identical with our own convinced us that it was useless. Further investigation may force us to change our opinion, but at the present time we feel justified in saying that the method of Rosenberger is not a reliable one and does not furnish a means for the diagnosis of tuberculosis either in the early stages or later.

NOTE.—Since the above paper was read the question of tubercle bacilli in the blood seems to have been entirely cleared up. Brem has shown that the acid-fast bacilli, mistaken by Rosenberger for tubercle bacilli, are frequently contained in distilled water as found in laboratories. After spreading the blood on the slide, Rosenberger lakes it by flooding with distilled water, which must stay in contact with it for some time, after which it is dried and stained. During the process of laking the acid-fast bacilli become fixed in the smear and take the subsequent stain. The observation of Brem has been confirmed by numerous workers, and at the present time we can say with a great degree of confidence that tubercle bacilli cannot, as a rule, be found in the circulating blood. Even when introduced directly into the circulation of animals, they disappear from the flowing blood within a few minutes, as has been demonstrated by Schroeder and Cotton, MacFarland, Anderson and others. We therefore feel confident in reiterating the opinion expressed by us in our presentation before the Wisconsin State Medical Society last June.

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* Read before Wisconsin State Medical Society, June 23, 1909.

[1] Shown in THE JOURNAL A. M. A., Sept. 30, 1905, p. 988.

CASE OF DERMATITIS HERPETIFORMIS FOLLOWING PAPAW POISONING

B. G. R. WILLIAMS, M.D.
PARIS, ILL.

The following report is interesting mainly because of the apparent etiology of the disease:

History.—Mrs. K., American, aged 45, housewife, health previously good, stated that on the evening of September 18 she handled and smelled some papaws. In the morning an eruption appeared on her body, which she supposed was due to these as she had been affected previously in the same way. She used the ordinary sugar-of-lead lotion, but as there was no improvement in a week (September 26) she called on me.

First Examination.—In general this verified the patient's supposition as to the cause and showed the following condition of the skin: On all portions of the body except the hands, forearms, face, back, legs and feet were many small round vesicles filled with fluid. These were of various sizes, but always small and were round and surrounded by a marked hyperemia. Except for an almost intolerable itching and burning, there were no symptoms. I diagnosed the case as papaw poisoning and advised simple lotions, predicting most probably a speedy recovery.

The progress of the case, however, was not favorable, and on the evening of September 29 the patient informed me that she thought more eruption was appearing, especially on the back. She stated that the character of the eruption did not seem to have altered.

Second Examination.—When I saw her two days later (October 1) I was at once willing to change my diagnosis. Here and there over the skin were drying vesicles showing almost a scar-like character. I was struck at once by the appearance among many of them of a brown pigmentation, the intensity of which, though variable, was often very marked. Here and there were clumps of vesicles with injected bases. These I examined with a double convex hand lens. There were no ulcers nor were there any tendencies to spontaneous rupture. Vesicles, though still varying in size, were somewhat larger than previously. In general they were irregular in shape, often quadrilateral. Intermingled with the vesicles, hyperemia and pigmentation were scales showing the remains of dried vesicles. Blood examination showed no eosinophilia. I diagnosed a vesicular form of dermatitis herpetiformis. I prescribed mercury succinimid in small doses internally as an alterative and gave the patient resorcin-sulphur ointment for external application.

On October 3 practically the same condition was present. The distribution was as follows: neck, arms, flexor side of forearms, chest, back of trunk and on the thighs.

On October 20 the condition was the same except that the eruption was not so extensive. New groups of vesicles identical with the preceding ones appeared from time to time. Where clothing rubbed the body the lesions assumed an eczematous character. Pigmentation marked dying vesicles and slight scars showed the location of the oldest ones.

More Care for Swine than for Men.—The mere question of preservatives and adulterants is only a part of the great question of pure food to which the public must be educated, writes Professor Irving Fisher in a popular article in the New York *Christian Advocate.* We must not forget, for instance, the lack of proper meat inspection for the citizens of this country. The present federal meat inspection is almost wholly for the benefit of foreigners. Efficient state and municipal inspection is needed. Similarly we need a far better protection against an impure milk supply. In at least one of our states, the swine are better protected than the people. In that state the law requires that the skim milk from dairies shall be sterilized before it is fed to hogs, but there is no law requiring the sterilization of the remainder of the same milk which is to be made into butter and cream for human consumption.

Therapeutics

RENAL COLIC

Attacks of renal colic come on so suddenly and so unexpectedly, the pain which accompanies them is so agonizing, and the liability to subsequent attacks is so great, that suggestions concerning their prevention are certain to command attention, and the *New York Medical Journal,* Sept. 25 and Oct. 2, 1909, offers several articles on this phase of the subject.

It is not necessary to describe the well-known treatment for the paroxysm, but the following suggestions for the future management of the patient may be of value:

1. If the calculus becomes impacted in the ureter so that it cannot be dislodged, operation is necessary. If the calculus remains in the pelvis of the kidney, operation is advisable. If the calculus has caused purulent inflammation of the pelvis of the kidney, or abscess of the kidney, or if it has caused retention of urine, operation is immediately necessary.

It cannot reasonably be expected that remedies administered internally will cause the disintegration of a stone which is of sufficient size to set up an inflammation of the pelvis of the kidney, or is of sufficient size to permanently obstruct the ureter.

2. If the calculus is in the pelvis of the kidney, as shown by a radiograph, and is not causing any serious symptoms, and an operation is deemed inadvisable, the danger of its entering the ureter and causing an attack of renal colic will be diminished if the patient avoids muscular strain and unnecessary jolting.

3. If there is no reason to suspect that a calculus remains in the upper urinary passages, and if a calculus has certainly been passed, so that there is reason to believe that there exists in the patient a tendency to the formation of substances which will favor the development of renal calculi, a careful regimen should be laid down for his guidance.

Among the factors which are conducive to the formation of these calculi are intestinal fermentation and putrefaction, which give rise to autotoxemia, disordered metabolism, deficient oxidation and insufficient elimination by the intestines, kidneys, skin, and lungs.

The primary object of treatment, then, is to prevent the conditions from arising which either permit the formation of a calculus or will allow an increase in the size of one already present. As above stated, though a calculus may disintegrate, it should not be expected, and it is little less than reprehensible to promise, that any drug, or any water, will partially or completely dissolve it. However, both patient and physician hope to effect a solution, partial or complete, of calculi already formed, or, at least, that the sharp edges of the newly formed calculus may be rounded so that it will not cause so much pain. If a urate or phosphate concretion has not long been formed it may dissolve, but probably no other calculus can do so under the conditions surrounding it. The sharp edges of all calculi may become rounded, if long in the kidney, from mucous deposits alone.

The digestion must be made as nearly perfect as possible, and foods, drinks, and drugs that irritate the kidney must be prohibited. Intestinal fermentation must be avoided, and daily movements of the bowels must be secured. The diet should be carefully regulated, but the various articles allowed or forbidden vary according to the variety of calculus which the patient has passed, or it is decided is deposited in the urinary passages. If a calculus of uric acid has been passed, or there are uric acid crystals in the urine, as pointed out by Dr. John B. Talmadge, of New York (*New York Medical Journal*, Sept. 25, 1909), the patient should not take foods which contain large quantities of nuclein, such foods producing uric acid. The meats to be avoided are "liver, kidney, thymus, fish roe, caviar, smoked or pickled meats, and meat extracts." Talmadge would also prohibit "strong tea and coffee, asparagus, sugars, fats, farinaceous foods, and alcoholic beverages." He advises a diet "of meats which have been boiled to free them from the meat extractives, plenty of milk, eggs, bread, butter in small amounts, mild cheeses, jellies made with gelatin, and fruits in abundance, as the acids in these are not excreted as such by the kidneys."

If the concretions formed are uric acid or urates, uric-acid precursors, as above mentioned, should be avoided. Sugars, fats, and farinaceous foods need not be avoided as a class, though some individual starchy food may produce intestinal fermentation, and should be avoided. It is certainly best to reduce the frequency of the eating of meat to once a day, and it has been lately proved that alcohol in any form taken with a meal of meat tends to cause a decrease in the destruction of uric acid by the liver, or at least tends to cause an increased output of uric acid in the urine. Also, not all fresh fruits are advantageous, and cooked fruits are better than fresh fruits. Bananas, and especially roasted, are a valuable food. Prunes, especially cooked; oranges, if they agree with the individual; apples, if they agree, and especially cooked, are the fruits most satisfactory. Grape fruit is often inadvisable. Nuts (especially of the protein-fat type—almonds, peanuts, pignolias (pine nuts) —thoroughly chewed, are of value as food, and are generally readily digested.

It has lately been shown that potassium salts, such as the acetate, bicarbonate and citrate, tend to render the urine less likely to deposit urates and uric acid. This is not at all new clinically, but has only lately been demonstrated in the laboratory.

If the calculus passed consists of oxalate of lime or if oxalate of lime crystals occur frequently in fresh urine, the articles of food that should be especially prohibted, as tending to the formation of this salt, are, as enumerated by Talmadge, "spinach, rhubarb, beans, beets, tea, cocoa, gelatin, and all foods containing any great quantity of calcium (milk, eggs, vegetables of the cabbage family)." These foods, he states, contain a great deal of oxalic acid. The possibility of producing this substance from tea and cocoa is remote, and the amount that could be formed from beans is certainly small; hence these three articles of food could be allowed. Patients who have oxaluria should take "foods containing a high percentage of magnesium, as magnesium oxalate is easily soluble and thus oxalic acid is easily excreted." Such foods are "meat, fish, bread, farinaceous foods, and apples." Any of the magnesium salts also have this favorable chemical action in preventing the formation of calcium oxalate. Perhaps the best salt to administer is magnesium biphosphate (acid magnesium phosphate; the dose being 0.50 to 1 gram (7½ to 15 grains). If much is given it acts as a laxative.

If the calculus is phosphatic and the urine tends to deposit phosphates, the diet should consist largely of albuminous foods and foods containing organic acids. If much milk is taken, lactate may be administered at the same time, as it tends to keeps the phosphates in the intestines and prevents their absorption.

Nervous disturbances, pain, too much mental work, and worry will increase the output of phosphates, and such nervous tire should be prevented if possible.

Whatever the concretion may be that is deposited in the urine, oxidation and elimination should be promoted by general physical exercise, in the open air, and by bathing, especially warm bathing, and perhaps by other hydrotherapeutic or sweating measures.

The most useful medicinal treatments are the alkaline diuretics and the urinary antiseptics. Of the former class, potassium citrate, which is the pleasantest to take of the potash salts, should be administered in 1-gram doses (15 grains), every three hours, or in 2-gram (30-grain) doses, three or four times a day, preferably after meals. When taken with plenty of water it will, as above stated, aid in preventing uric acid and urate concretions. It is advisable, whatever may be the character of the calculi, that considerable quantities of water be drunk, preferably distilled water, as tending to aid in bringing about solution and keeping in solution the salts of the urine. It is often unwise for a patient to drink large quantities of an alkaline mineral water which may contain ingredients which are inadvisable for him to take into his system. It is also inadvisable to continue for any length of time alkaline salts in sufficient quantity to render the urine alkaline, as a prolonged alkaline urine tends to cause phosphatic deposits, tends to allow germs to grow, and mucous membrane irritation to occur in the urinary tract. Also a too long alkaline treatment is debilitating to the system; the loss of nitrogen is increased, and the weight is diminished. Alkalies tend to produce anemia, and iron must often be administered with the diet necessary to prevent uric acid deposits.

Of the class of urinary antiseptics, the one of most value is hexamethylenamin, which should be given in doses of from 0.25 to 0.50 gram (from 4 to 7½ grains), taken, dissolved, in a glass of water, three or four times a day.

If there is any pus in the urine or any infection is considered to be present, or an extra amount of mucus is produced, which tends so easily to form nuclei for depositions of salts in the urine, the best medicinal treatment is hexamethylenamina or phenyl salicylas (salol). If the urine is ammoniacal the patient should generally be given one of these drugs. Salol should not be administered if there is any kidney inflammation, or if there is albuminuria.

When there are urinary calculi, the condition of the circulation should always be carefully examined, and if there is any failure of the heart or any insufficiency of the heart muscle, or arteriosclerosis, large amounts of liquid should not be given, as the extra work put on the circulation is inadvisable. It is much better to overcome the tendency to the formation of calculi by a proper diet than by very large amounts of water under these conditions.

Tuberculosis in Children of the Tuberculous.—A. Pissavy has been collecting data in regard to the prevalence of tuberculosis in 569 households in France, some in towns and others in rural districts. In 469 of these households neither parent was tuberculous, but 123, that is, 8 per cent. of the total 1,428 children in these families acquired tuberculosis. In 100 other households one or both of the parents were tuberculous and 93 of the 292 children in these families contracted the disease, that is, about 31 per cent. The proportion of children contracting the infection averaged about the same in the country and town families. His communication was published in the *Bull. Soc. Méd. des Hôp.*, 1909, xxvi, 456.

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[*For other information see second page following reading matter*]

SATURDAY, DECEMBER 4, 1909

THE PHARMACOPEIA, ITS HISTORY AND ITS IMPORTANCE TO THE MEDICAL PROFESSION

The importance of the next Pharmacopeial Convention should be thoroughly understood by all medical societies and physicians. These conventions, as well as the national Pharmacopeia, originated in a proposition submitted to the Medical Society of the County of New York by Dr. Lyman Spalding in 1817. Dr. Spalding proposed that the United States be divided into four districts—northern, middle, southern and western—and that each district should hold a convention of delegates from the medical societies and schools situated within it, to formulate a pharmacopeia. The four district pharmacopeias were to be taken to a general convention to be held at Washington, composed of delegates from the four districts. From the district pharmacopeias the delegates were to compile a national pharmacopeia. This plan was adopted, the district convention for New England being held in Boston and the convention for the middle states in Philadelphia, June 1, 1819. No conventions were held in the southern and western districts, but delegates to the national convention were appointed. The first general convention for the formulation of a national pharmacopeia met at Washington, Jan. 1, 1820. The two pharmacopeias prepared in the northern and middle districts were consolidated into one work, which was published in Boston, December, 1820, in both Latin and English. A second edition appeared in 1828.

The convention of 1820 provided for its own perpetuation and for future revisions, by instructing its president to issue notices in 1828 to all incorporated state medical societies and incorporated medical colleges and schools, asking each to vote for three delegates to represent the district at the general convention to be held at Washington in January, 1830, the convention to consist of twelve delegates. The second convention was held at Washington on Jan. 4, 1830, thirteen delegates being present. It provided for its perpetuation by instructing its president to issue a notice to incorporated state medical societies, incorporated medical colleges and incorporated colleges of physicians and surgeons, asking each to elect three delegates to attend a general convention to be held at Washington in January, 1840. The district plan of representation was given up and has never been resumed.

At the third convention, held in 1840, twenty delegates were present. A committee on revision and publication was appointed which published the second revision of the Pharmacopeia in 1842. This committee was instructed to ask the cooperation of schools of pharmacy in its work.

In the call for the fourth convention of 1850, incorporated colleges of pharmacy were included and were allowed to send three delegates, the same as medical colleges. This convention, which met at Washington in May, 1850, was composed of thirty delegates. Only two pharmaceutical schools were represented, all of the other delegates being from medical colleges and societies.

In 1860 the fifth convention was held, thirty delegates being present, four colleges of pharmacy being represented.

The sixth convention was held May 4, 1870, sixty delegates being present, seven pharmaceutical schools being represented. The fifth revision was published in 1873.

The seventh convention met May 5, 1880. One hundred and nine delegates were elected to represent ten medical societies, twenty-three medical colleges, eleven pharmaceutical colleges and the medical departments of the Army, the Navy and the Marine-Hospital Service. Seventy-five delegates were present.

The eighth convention was held on May 7, 1890, 175 delegates being present, representing fifteen medical societies, twenty-three medical colleges, twenty-five pharmaceutical associations, twenty-three colleges of pharmacy and the medical departments of the three government services. The provisions made for representation in 1900 were the same as those for 1890.

The ninth decennial convention was held at Washington May 2, 1900. Forty-one delegates were present representing twenty-six medical societies, forty-four delegates from thirty medical colleges, fifty-three delegates from twenty-seven pharmaceutical colleges and fifty-seven delegates from twenty-eight pharmaceutical societies, the American Medical Association, the American Pharmaceutical Association and the three government services being represented by twelve members. The total attendance, as shown by the official report, was two hundred and seven, of which one hundred and fourteen were pharmacists and ninety-three were physicians.

The point to be emphasized in the above historical summary is that the convention was originally inaugurated and for many years carried on solely by the medical profession, and that it was not until 1850 that other than medical societies and medical colleges were authorized to send representatives. In that year, pharmaceutical colleges were for the first time given representation. Not until 1890 were pharmaceutical societies added to the list of accredited bodies.

The medical profession during the past thirty years has not given to the revision of the Pharmacopeia the attention which its importance deserves. In spite of the fact that this book originated with the medical profession and was compiled and published primarily for its use, it has come to be regarded too much by physicians as a book which is of interest and value mainly, if not solely, to the pharmacist and in which the physician is not especially concerned. The attitude of the physician toward the Pharmacopeia as well as the lack of knowledge on this subject has been frequently commented on in THE JOURNAL. It is now time that specific and lasting reforms were effected. Two definite steps should be taken before the meeting of the next convention in Washington: (1) All incorporated state medical associations and medical colleges entitled to representation should select the three best representatives possible and should see to it that they attend and take part. (2) Each county society should devote at least one meeting during the winter to a discussion of the present Pharmacopeia and the formulation of suggestions as to its improvement.

There is, indeed, grave danger lest this work, which was primarily a reflection of the needs of the medical practitioner, should become a purely pharmaceutical rather than a medical compilation. There is also danger of its being controlled by commercial interests. Such a result will be due solely to lack of interest and activity on the part of the medical profession. Active interest in this matter should be aroused and medical societies should see to it that they are properly and effectively represented in the coming convention, and that their delegates are instructed regarding the desires and opinions of those they represent. If every county society will devote one evening to the discussion of this question and will send its recommendations to Dr. Reid Hunt, chairman of the Committee of the American Medical Association on the Pharmacopeia or to the Council on Pharmacy and Chemistry of the American Medical Association, their recommendations will be transmitted to the convention and will receive consideration.

ARTHRITIS DEFORMANS

Nothing in medicine is more obscure than the pathogenesis of the chronic joint disturbances which we group, in order not to commit ourselves, under the descriptive term "arthritis deformans." One of the essential causes of our ignorance concerning them is a lack of thorough and extensive study of the anatomic changes which underlie the clinical manifestations, which is undoubtedly due in large part to the difficulty one meets in obtaining any considerable quantity of material of this sort. An extensive study of material from sixty-five cases, collected during eight years by Nichols and Richardson,[1] promises to clear up many of the misunderstandings and to furnish the sound anatomic basis which we must have before the etiology (and, depending on that, the therapy) can be worked out.

On account of the close relationship of the several kinds of tissues which make up the joints, it is possible for the same irritant to produce many different kinds of structural changes according as it acts on one or the other of these tissues; or, on the other hand, various agents may produce quite similar changes in the joints. As a matter of fact the lesions found, irrespective of what the clinical features or apparent etiology may have been, fall distinctly into one of two categories, proliferative and degenerative. It being a general law of pathology that the same agent may cause either proliferation or degeneration, in accordance with concentration, tissue nutrition, and other factors, it follows that these two pathologic groups do not correspond to two different sets of etiologic factors or to two different diseases, but merely represent different effects from similar causes, or similar effects from different causes. Clinically, however, there are well-marked differences, corresponding to the degenerative and proliferative types of joint changes, when either of these types occurs in a sufficiently distinct way.

The proliferative joint changes usually predominate in the cases of arthritis which begin rather acutely, resembling acute rheumatism at first, and involving more often persons under 50 than older, and the clinical course is characterized by attacks and remissions of the joint symptoms, often terminating in complete ankylosis. With the pronounced degenerative type of lesions is commonly associated a history of insidious onset, usually affecting older people, and causing great anatomic alterations in the joints with but little tendency to produce actual ankylosis. But, since the presence of proliferative changes in one part of a joint may cause degenerative changes in another part, or conversely, it is evident that both anatomic changes and clinical manifestations are often of mixed character. It is also evident that, once the injury in the joint has been started, a vicious circle is readily established, for a primary degenerative change may start up proliferative processes in the neighborhood, and, these causing degeneration of opposed surfaces, the process becomes progressive; hence the bad prognosis of arthritis deformans and the mixed anatomic picture which has caused so much confusion of classification and pathology. Once the joint injury has become well established, therefore, the pathologic changes may continue even when the original etiologic factor has disappeared, and when this factor is a chronic persistent one the course of the disease must necessarily be downward. In earlier stages the prognosis is better if the exciting cause can be removed, and hence the importance of establishing the etiology of the joint changes. As already intimated, we are commonly at a loss as to etiology, partly because of previous lack of understanding of the pathology, and partly because of the extremely varied causes which may start up joint changes that eventually terminate in chronic arthritis. Nichols and Richardson believe, from their studies, that there is no one specific cause, as some have maintained, but that the same anatomic results may come from the most different causes. Sometimes acute infection begins the joint changes, sometimes chronic trauma, but more often, in all probability, some soluble irritant, presumably of metabolic origin, selectively affects the joints and adjacent bone tissue. With the careful study of the pathology which these authors have supplied for a basis, the search for the etiology should now make more substantial progress than it has heretofore realized.

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[1] Nichols and Richardson: Jour. Med. Research, 1909, xxi, 149.

SUDDEN DEATH DURING ANESTHESIA

Although we have not yet ascertained the nature of the chromaffin substance which Kohn found in the adrenals and other related organs of sympathetic origin, yet that it is of essential importance to the function of these organs is unquestionable, for its presence and quantity stand in direct relation to their functional capacity. For example, Wiesel found that in Addison's disease there was an absence or paucity of the chromaffin substance not only in the adrenals, but also in the other organs of the so-called chromaffin system. Conversely, in cases of destruction of the adrenals by malignant growths without resultant Addison's disease, it has been found that the chromaffin cells in the other organs were well supplied with their specific content, thus explaining why destruction of the adrenal had not resulted in the familiar symptom-complex of Addison's disease. These and other observations indicate that the amount of chromaffin substance present in the tissues is an index of their functional capacity; and this permits of study of the relation of these tissues to various disease processes.

At the present time the chief property which can be ascribed to the chromaffin system is that of stimulating vascular tonicity; and Hornowski, struck by the similarity of the conditions presented by persons dying suddenly during or after surgical anesthesia, to the manifestations of shock, which is essentially a loss of vasomotor tone, began an investigation of the condition of the chromaffin system in death following operations. In four such cases he found constantly a decrease in the chromaffin substance,[1] and he was able to cause a similar reduction in the chromaffin substance experimentally in rabbits by prolonged or repeated anesthetization. This effect he ascribes chiefly to the action of the chloroform, explaining it as follows: Chloroform lowers the blood-pressure, and the chromaffin system is stimulated to neutralize this decreased vasomotor tone; if the stimulation of this system is too violent or protracted, or if previous shock, trauma or infection have injured or overworked the chromaffin cells, they become exhausted and unable to replenish the supply of vasostimulating substance, death resulting from vasomotor paresis. In such cases microscopic examination shows a striking absence of chromaffin substance in the usual locations, whereas when no vascular paresis results from anesthesia and operation, because of adequate compensation by the chromaffin cells, the brown color of this tissue is very pronounced on account of the quantity of stored chromaffin substance.

Schur and Wiesel have also found that the chloroforming of rabbits decreases the staining of the chromaffin cells by chromic acid, and they, too, suggested that this effect of chloroform may account for sudden deaths during anesthesia. Hornowski shows, in addition, that surgical trauma, previous injury or pain, and infection also have a similar effect, so that the exhaustion of the chromaffin system during anesthesia may be more properly ascribed to the added influence of these causes, the chloroform by its depression of vascular tone completing the depletion of blood-pressure-raising substance. Although Schwarzwald[2] and others have not always found demonstrable decrease in chromaffin material in all persons dying during anesthesia, yet the positive results of experiments and the positive autopsy findings that have been recorded are sufficient to indicate the possibilities of this line of research. An interesting observation made some time ago by Hedinger[3] carries support to Hornowski's theory. He found that in status lymphaticus, in addition to the lymphatic hyperplasia, there is a marked hypoplasia of the chromaffin system, analogous to that seen in Addison's disease. Since the most striking effect of the status lymphaticus is sudden death following trivial shock or trauma, this deficiency of the chromaffin system is significant; furthermore, not a few deaths in status lymphaticus have occurred during anesthesia.

THE VALUE OF INDEXED CASE RECORDS

To those who are unfamiliar with the advantages of a system of classifying and indexing case histories the keeping of such records may appear like an entirely unnecessary and laborious piece of work. If the habit is once formed, however, it will be found to be of the greatest help in clarifying the worker's conception of the field in which he is working, and an incentive to more precise observation. If an effort is made at regular intervals—once a week, for example—to record in black and white the diagnosis of every case that has been seen during that interval it will afford a very interesting and instructive review, and the perspective thereby gained will not infrequently serve to clear up obscure points and to suggest practical points as to prognosis and treatment as well as diagnosis. If the observer is thoroughly honest with himself and takes refuge in no obscure terms or uncertain diagnoses it will inevitably be found that in a fair proportion of his cases a decision must be definitely or indefinitely postponed. Necessary data will be found wanting in certain cases; diagnostic points which have been overlocked and which might throw light on the problem come to mind, with the result that at the next interview with the patient these points will be noted and the condition will be better understood. As the records grow, their value will be constantly increased by a properly made index, rendering early material available for study and comparison with recent cases. This advantage of the index will be enhanced if, besides the record of diagnoses, there is kept an index of signs and symptoms. While such an indexed record would necessarily be voluminous, it could be kept within bounds by recording only the important and unusual phenomena, while the observer could accumulate data on any particular subject in which he was interested to the limit of his material and time. An outline of a system for classifying and indexing case records was published in THE JOURNAL early this year.[1]

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[1] Hornowski: Virchow's Arch. f. path. Anat., 1909, cxcviii, 93.

[2] Schwarzwald: Verhandl. d. deutsch. path. Gesellsch., 1909, xiii, 269.

[3] Hedinger: Verhandl. d. deutsch. path. Gesellsch., 1907, xi, 29.

So far as the question of time is concerned, the actual work of writing requires far less than might be imagined, and the time spent in thinking over the problems which present themselves is far better spent in this way than in unsystematic study of abstract problems. Besides the advantage of obtaining a clearer and more intimate knowledge of the individual patients which is afforded by such a review, there is much interest and profit in grouping the various conditions and comparing the features which serve to distinguish the different groups. Certain pathologic conditions may be found to be associated in a number of instances with subsidiary or secondary processes, which may or may not be emphasized in familiar literature; but such a personal observation would be of far more value to the practitioner than could any familiarity with the published opinions of others. Suggestions of this nature frequently present themselves in a study of groups of cases, and in turn serve as a potent stimulus to more thorough observation of the individual patients. The same association will be looked for in new patients presenting one or the other of the conditions noted, the suggested hypothesis being proved or disproved as the series is enlarged. In short, such a system places the "experience" of the observer on a foundation of relatively certain facts, instead of on the vague impressions which so often constitute the basis of authority.

It may be asserted with some truth that there is danger of being misled by reliance on an insufficient amount of evidence, but, as every worker must trust to some extent to his own observations, it is just as well that he should have as exact a knowledge as possible of what his own observations really are. This exact knowledge is no more reason for the student's being intolerant of the experience of others than ideas based on a less certain foundation would be. It should be needless to add that any notes embracing data from the misty side of the region that separates the known from the "guessed at" are worse than useless.

ALTMANN'S GRANULES IN TUMOR CELLS

Some time ago it was shown by Altmann that the glandular cells of vertebrates contain well-defined granules which can be specifically stained with acid fuchsin, their number varying with the nature and functional activity of the cells examined. These granules are most commonly called "Altmann's granules," but also "fuchsinophil granules" and "plasmosomes." Similar but smaller granules have been described in plasma cells and lymphocytes by Schridde. A study of the distribution of these intracellular granules in human tissues in normal and pathologic conditions, including particularly tumors, has been made by Beckton, with interesting results which may prove to be of much practical importance.[1] He finds that the granules of the glandular epithelium are probably different from those of the stroma cells, as the former can be fixed by formalin, while the latter are fixed only by bichromate solutions. The presence of abundant granules of the latter type in plasma cells, lymphocytes and fibroblasts supports the contention that these cells have a secretory function, since Altmann's granules are supposed to have to do with secretory activity.

In inflammatory conditions these cells, as well as the proliferating endothelial cells, are found to contain abundant granules, whether the process is acute or chronic. In tumors, however, a suggestive observation was made, namely, that in malignant tumors of all kinds the Altmann granules are absent from the cancer cells, or else are scanty, while in benign tumors they are present in much the same proportion and form as in the normal tissue which the tumor replaces. The importance of this finding lies in two directions: first, it may point the way to an improvement in our differential diagnosis of malignant tumors from benign tumors and from inflammatory conditions; second, it has suggestive bearing on the biology of tumor cells. Thus, as Lazarus-Barlow points out, the absence of Altmann's granules from cancer cells shows that such cells are fundamentally different from the normal cells from which they arose. This difference may be regarded as an expression of deviation from, or loss of, normal function.

If Beckton's observations are confirmed by those who repeat his work—and it will undoubtedly soon be repeated—the differential microscopic diagnosis of cancer will become much easier and more certain than it now is.

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[1] Black, Carl E.: System in Recording Cases, THE JOURNAL A. M. A., March 6, 1909, lii, 762.

[1] Beckton: Jour. Path. and Bacteriol., 1909, xiii, 185; Arch. Middlesex Hosp., 1909, xv, 182; Brit. Med. Jour., Sept. 25, 1909.

THE RESPIRATORY HIPPUS

A recent note by Roch and Campiche[1] calls attention to an unusual phenomenon, which they had previously described and designated as "the respiratory hippus." This phenomenon, which consists of an inspiratory dilatation and expiratory contraction of the pupils, has been noted also by Wiesenger[2] and by several Italian observers, but its significance is still a matter of doubt. In the cases seen by Roch and Campiche it was always associated with a pulsus paradoxus, and, in their opinion, might be explained on the same grounds, namely, an abnormal respiratory variation in blood-pressure due to unusual variations in the intrathoracic pressure, especially when associated with myocardial weakness.

Medical News

GEORGIA

District Society Meetings.—The Fifth Congressional District Medical Society held its fifth annual meeting in Atlanta October 5. The session was devoted to the discussion of pellagra. The following officers were elected: President, Dr. Hugh M. Lokey, Atlanta; vice-president, Dr. William D. Travis, Covington, and secretary-treasurer, Dr. J. Ross Simpson. Atlanta.——The Tenth District Medical Society, at its annual meeting, held in Augusta, November 9, elected the following officers: President, Dr. Noel M. Moore, Augusta; vice-president, Dr. Joshua R. Beall, Blythe; secretary-treasurer, Dr. George A. Traylor, Augusta; and district councilor, Dr. Wyman W. Pilcher, Warrenton. The principal address was delivered by the president-elect on "Pellagra."

ILLINOIS

New Hospital for Sterling.—The charter for the Whiteside Public Hospital, Sterling, has been applied for and is expected to be granted in a short time. The prospects for the success of the institution are excellent, as both the laity and physicians of the city are interested in the project.

Physicians' Club Organized.—A club has been organized in Lewistown, whose membership comprises all the physicians in the city. The following officers have been elected: Dr. D. D. Talbott, president; Dr. Eli G. Davis, vice-president; Dr. William S. Strode, secretary; and Dr. Samuel Oren, treasurer.

Personal.—Dr. William E. Washburn, Kewanee, received internal injuries in the overturning of his automobile at Cherry, November 21.——Dr. Charles E. Colwell, Aurora, has been elected president; Dr. Oliver H. P. McNair, Batavia, vice-president, and Dr. R. S. Denney, Aurora, secretary-treasurer of the Aurora Hospital.

The New Cook County Infirmary.—All of the buildings of the new Cook County Infirmary, on which work was begun last spring, are under roof, and the present indications are that the institution will be ready for occupancy by the middle of January. The institution, when completed, will have cost $1,750,000, and will accommodate about 1,800 inmates, with ample provision in the general scheme for the erection of additional buildings as required. On the highest spot on the grounds has been built the hosiptal for tuberculosis patients, 300 feet away from the nearest building of the central group.

Chicago

Cornerstone Laid.—The cornerstone of the addition to the Norwegian Lutheran Deaconess Home and Hospital was laid November 25. The new building is to cost $75,000.

Explosion in Hospital.—An explosion in the furnace of the American Hospital, November 28, wrecked the heating plant and created much alarm. The patients in the building escaped injury, as the physicians and nurses were promptly on hand and prevented a panic.

Certified Milk in Chicago.—Dr. Charles S. Bacon, in his illustrated talk on this subject in the Public Library building, November 27, spoke of the organization of the Milk Commission of the Chicago Medical Society, and stated that three country dairymen had been induced to sign contracts drawn up after the pattern of the national form, and had agreed to conform to the rigid demands of the commission. In return for this, the commission gives each dairyman a copyrighted trade mark bearing the certification of the society, which appears on the label or stopper of every bottle.

KENTUCKY

Personal.—Dr. Alexander Vertes, Louisville, has returned from abroad.——Dr. Matthias R. Perry, Russellville, has succeeded Dr. M. E. Alderson, Russellville, as physician of Logan county.

Society Election.—Hardin County Medical Society has elected the following officers: Dr. Clyde C. Carroll, White Mills, president; Dr. D. Elmo McClure, Sonora, vice-president; Dr. John M. English, Elizabethtown, secretary-treasurer, and Dr. C. T. Riggs, Upton, delegate to the State Medical Association.

Babies' Milk Fund.—The Babies' Milk Fund Association of Louisville, in its second annual report, showing the work done during the summer of 1909, states that at the beginning of last October the association had to its credit six distributing stations and one laboratory in operation; six graduate nurses, four assistants, four supervisors and one assistant supervisor on duty; twelve weekly consultations held; affiliation with eighty-two physicians; registration of 284 children; 2,300 visits made by nurses to homes; $2,900 collected and 34,000 bottles of milk distributed.

MASSACHUSETTS

New Hospital Opens.—The Rufus S. Frost Hospital, Chelsea, opened its new building informally, October 11, to the members of the medical profession and representatives of the state and city. The hospital is built on the site of the Rufus S. Frost homestead and is three stories in height, flanked with two-story wings. The right wing is devoted entirely to surgery, including a maternity ward; the left wing to medical wards and private rooms. There are seventy-eight beds in the institution. The medical and surgical staff is as follows: Chairman, Dr. E. Frank Guild; secretary, Dr. George B. Fenwick and Drs. Charles N. Cutler, Frank A. Mahoney, Francis B. McClintock, Edward J. Powers, Frederick H. Plummer, Frank S. Garrett, John M. Wells, Joseph B. Fenwick, John M. Doran and John G. McPhail, all of Chelsea; Drs. J. Stewart Morris and William C. Newton, Revere; Dr. Horace E. Bragdon, East Boston, and Dr. William J. Porter, Winthrop. The consulting staff consists of Drs. George H. Cunningham, Jr., George W. W. Brewster, LeRoi G. Crandon, Arthur T. Legg, Philip Hammond and Frederick M. Spalding, all of Boston.

MARYLAND

Concentration of Colleges.—Senator Linthicum proposes a concentration of medical and other colleges which receive state aid into a state university, to be governed by a board of regents.

Appropriations Asked.—The State Board of Aid and Charities has been asked for the following annual appropriations: College of Physicians and Surgeons, Baltimore, $5,000; Maryland Medical College, $4,000; Baltimore Medical College, $5,000; University of Maryland, $4,000; Medical and Chirurgical Faculty of Maryland, $10,000; and the Maryland Asylum and Training School, $50,500 for maintenance and $52,500 for new buildings.

County Society Election.—Queen Anne's County Medical Society, held its annual meeting at Centerville, November 12. The following officers were elected: President, Dr. Ernest F. Smith, Centerville; vice-president, Dr. James W. Stack, Wye Mills; secretary-treasurer, Dr. Laura E. Reading, Hayden; delegate to the Medical and Chirurgical Faculty of Maryland, Dr. Norman S. Dudley, Church Hill, and censors, Drs. William G. Coppage, Church Hill; Wesley W. Chairs, Queenstown, and Walter H. Fenby, Ruthsburg.

Baltimore

Goldberger Prize Awarded.—Dr. Clemens von Pirquet, Johns Hopkins University, has been awarded the Goldberger Prize of 2,000 crowns by the Imperial and Royal Society of Physicians of Vienna on account of his discoveries of certain phases of immunity and skin reaction in the diagnosis of infantile tuberculous lesions. This prize is awarded every three years for research work in experimental medicine.

New Buildings on Johns Hopkins Grounds.—The contract has been awarded by the Johns Hopkins trustees for the building of the Phipps Dispensary on the hospital grounds, at a cost of $500,000. The building will be five stories in height, fire proof and will correspond with the other buildings of the group.——The Harriet Lane Johnson Home for Crippled Children is to be erected on the grounds of Johns Hopkins University at a cost of $300,000.

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[1] Roch, M., and Campiche, L.: Coexistence de l'hippus respiratoire et du pouls dit paradoxal. Rev. de méd., 1909, xxix, 661; abstr. in THE JOURNAL A. M. A., Sept. 18, 1909, liii, 979.

[2] Wiesenger: Charité Ann., 1904-05, xxx, 591.

Personal.—Dr. A. M. Foster, superintendent of the Eudowood Hospital for Consumptives, near Baltimore, has resigned, to take charge of the Louisville Antituberculosis Association and Municipal Tuberculosis Department.——Dr. Gustavus Charles Dohme is said to be critically ill with uremia.——Dr. Thomas H. Buckler, president of the Paint and Powder Club, has resigned.——Dr. Ira Remsen, president of the Johns Hopkins University, has been made president of the Charity Organization Society.——Dr. John S. Fischer sailed for Europe November 27.

MISSOURI

Tag-Days.—Hospital Tag-Day in St. Louis, November 27, is reported to have netted more than $30,000 for the hospitals of the city.——St. Joseph collected more than $7,500 for charity at its first tag day, November 21.

Antituberculosis League Formed.—The Louisiana Antituberculosis League was organized November 15. Dr. James W. Dreyfus was elected president, and Drs. Joseph B. Unsell a member of the executive committee.

County Society Meetings.—The Caldwell County Medical Society, at its annual meeting, October 27, elected Dr. Benjamin F. Carr, Polo, president; Dr. Stephen D. Smith, Cowgill, vice-president, and Dr. George W. Goins, Breckenridge, secretary-treasurer.——Howard County Medical Association, at its annual meeting held in Fayette, November 5, elected the following officers: President, Dr. W. B. Kitchen, Glasgow; vice-presidents, Dr. Thomas C. Richards, Fayette, and Joel Y. Hume, Armstrong; secretary, Dr. Charles W. Watts, Fayette; member of the house of delegates, Dr. Joel Y. Hume, Armstrong; and censors, Drs. Charles O. Lewis, Fayette, Andrew W. Moore, Fayette, and Vaughan Q. Bonham, Fayette.

State Bureau of Vital Statistics.—The State Bureau of Vital Statistics, which was provided for by the last legislature, and which is in charge of the state board of health, is now in process of organization, and will be in full operation January 1 next. Dr. Frank B. Hiller, secretary of the State Board of Health, is registrar for the central bureau. The law prescribes that each city and incorporated town shall constitute a registration district, and for the convenience of the rural profession of the state these sections will be divided into rural districts. All births and deaths must be reported to the local registrar, who in turn reports to the central bureau on the tenth day of each succeeding month. No burial or other disposition of a dead human body can be made without first securing a burial or transit permit from the local registrar. The certificate, in addition to the fact of death, will furnish statistics regarding mortality from various diseases, nationality, occupation, conjugal relation, age, sex, etc., also mortality by cities, towns, and rural districts. Missouri is said to be the first state in the Union to put into practical use the new United States standard death certificate.

NEW HAMPSHIRE

Medical Society Meeting.—The Rockingham County Medical Society held its fifth annual meeting in Portsmouth November 11. The following officers were elected: President, Dr. Elbert A. Landman, Plaistow; vice-president, Dr. Thomas W. Luce, Portsmouth; secretary, Dr. Walter Tuttle, Exeter; treasurer, Dr. Alice M. M. Chesley, Exeter; censor, Dr. John H. Neal, Portsmouth, and delegate to the state society, Dr. John W. Parsons, Portsmouth.

NEW YORK

State Board Approves.—The State Board of Charities has approved the certificate of incorporation of the Newburgh Tuberculosis Sanatorium which is to be the gift of former Governor B. B. Odell.——Approval has also been given to the consolidation of the New York Infant Asylum and the Child's Nursery. This consolidation, when ratified by the Supreme Court, will unite institutions whose joint resources are about $1,000,000, and whose annual expenditures at present are more than $200,000.——The incorporation of the Southampton Hospital Association, which proposes to establish a general hospital at Southampton, L. I., as well as the incorporation of the Lakeview Home, were approved by the board.

Bequests to Charities.—By the will of the late John S. Kennedy, $2,250,000 is devised to the Presbyterian Hospital, $25,000 to the New York Infirmary for Women and Children, and $10,000 each to the Manhattan Eye and Ear Hospital, the New York Orthopedic Dispensary, the Fordham Home for Incurables, and the New York Society for the Relief of the Ruptured and Crippled.——By the will of the late Mr. Mitchell Valentine, one-half the residue of an estate, after the payment of certain small bequests, is bequeathed to the Presbyterian Hospital. The value of the bequest is estimated at $1,000,000.——The will of the late Emanuel Einstein bequeaths $10,000 to Mount Sinai Hospital and $5,000 to the Montefiore Home for Chronic Invalids.

Radium Institute of America.—At a recent meeting at the New York Yacht Club a society was formed for the study of radium, to discover any radiferous deposits in the United States and to buy quatities of the substance in Europe for clinical use in the United States. The idea of the founders of this society is to establish a clinic in connection with some hospital where radium treatment will be administered free to those who need it. They will endeavor to protect the public against the claims of patent-medicine manufacturers. The following officers were elected: President, Dr. Charles F. Chandler, professor of chemistry in Columbia University; vice-president, Dr. Robert Abbe; secretary, Prof. William Hallock, of the Department of Physics, Columbia University; assistant secretary, Prof. George B. Bertram of the same department; treasurer, Dr. Hugo Lieber, manufacturing chemist.

Tuberculosis Preventorium for Children.—The report of the first preventorium established in the United States emphasizes the fact that prevention of tuberculosis is easier and better than its cure, as overcrowding breeds disease, and quicker results from the relief of congestion are obtained by taking children of tuberculous patients into the country before the infection takes deeper root and the change is absolutely necessary. In this way it is noteworthy that within three months children may be fully restored to health. This work was influenced and made possible by Mr. Nathan Straus, who presented the Grover Cleveland Cottage and eight acres of pine land surrounding it, and the majority of stock in the Lakewood (N. J.) Hotel property, in which his investments amount to half a million dollars. Possession was taken of the cottage in May; the porch was arranged for six beds and the house for fourteen. The girls were all placed in this cottage, and in addition rooms for the matron and the help were provided and a dining room with accommodation for from forty to fifty children. Near the cottage has been built an open-air camp about 100 feet long to accommodate twenty boys. Since the opening of the institution, ninety-two boys and girls ranging from 4 to 14 years of age have been received. During their stay they have been in good health, showing steady improvement in general condition and gaining in weight. Plans are being made to increase the capacity of the institution to 400 children by next summer. The preventorium proposes not only to treat such children as need help but to carefully "follow up" such children and look after their welfare for some time after they have been discharged from the preventorium. A department of industrial education is to be arranged to include carpentering, cobbling, basketry, weaving, stencil work, medal work, etc. This department has been endowed by Miss Dorothy Whitney with $100,000, the interest of which will pay for instruction, tools, and materials. The medical service of the institution has been in charge of Dr. Alfred F. Hess, who has visited the institution at least once a week and has kept in touch with details. Drs. Abraham Jacobi, Hermann M. Biggs and Sigismund S. Goldwater has aided materially by their expert advice, in bringing about a practical organization.

New York City

Hospital for East New York.—Plans for the new Bradford Street Hospital in the East New York section of Brooklyn have been filed. The hospital will cover an entire block and will have a capacity of 100 beds. The estimated cost will be $350,000.

Lower Temperature in School Rooms.—Dr. C. Ward Crampton, director of physical training in public schools, has sent out a notice to all school teachers ordering them to keep the temperature of school rooms at 68 degrees instead of 70 as has been the practice. Dr. Crampton holds that the pupils will do better work if the air is cooler, and it is stated that there is likely to be a further general reduction of temperature in a short time. In England the school rooms are kept at a mean temperature of 60 degrees.

Neurological Institute Opened.—The New York Neurological Institute for the treatment of nervous and mental diseases, said to be the first of its kind in the United States, was opened this week at 149-151 East Sixty-seventh street. The building is six stories in height and fireproof. Dr. Joseph Collins is chief of staff of the medical board, and associated with him are Drs. Pearce Bailey and Joseph Fraenkel, assistant physicians; Dr. Smith Ely Jelliffe, alienist; Dr. Moritz Gross, in charge of the hydropathic department; Dr. Augustin A. Wolf, in charge of the electrotherapeutic department; Dr. D. M. Kaplan, in charge of the laboratory; and consulting physicians, Drs. Charles L. Dana, Francis P. Kinnicutt, Hermann M. Biggs, and Bernard Sachs, Dr. George G. Taylor is house physician. Much of the work done is on a charity basis, but patients may be taken at a cost of from $10 to $15 per week. The dispensary is to be open daily for charity cases only. The special province of the institute is the treatment of nervous and mental diseases with the minimum of medical and surgical interference.

OKLAHOMA

Physicians to Withdraw Advertisements.—Jefferson County Medical Society has asked all physicians belonging to the society to withdraw their advertisements from local newspapers.

Tuberculosis Exhibition.—Under the auspices of the State Medical Association and the State Board of Health, a convention on tuberculosis and exhibition will be held at Oklahoma City, January 10 and 11, at which ways and means will be discussed for the prevention and eradication of tuberculosis.

Personal.—Dr. John W. Riley has been selected as commissioner of health of Oklahoma City.——Dr. Benjamin F. Hamilton has been appointed physician in charge at the Government Indian School, Shawnee.——Dr. James H. Proffitt, Oklahoma City, was seriously injured in a collision between an interurban car and an automobile, September 3.

Cornerstone Laid.—The cornerstone of the new hall of the University of Oklahoma, Norman, was laid November 16, with Masonic ceremonies. The new building will relieve the crowded condition of the medical department of the university, to which it has been subjected since the destruction by fire last year of one of the largest buildings of the institution.

Licenses Revoked.—The license of Dr. J. M. Means, Claremore, charged with performing a criminal operation, is said to have been revoked, October 13, by the State Board of Medical Examiners. At the same session the license of Dr. Leander M. Overton, Guthrie, was revoked on the ground that he was a graduate of a medical college whose diploma was not recognized by the board. Dr. Overton has filed suit against the State Board, and has asked that it be enjoined from molesting him in the practice of medicine.

Antituberculosis League Organized.—The Oklahoma Colored Antituberculosis League was organized in Oklahoma City, November 18, at a meeting held in conference with Dr. John C. Mahr, Shawnee, state superintendent of health. A local organization in every negro church in the state is planned, and a vice-president is to be appointed to organize the colored people of each county in their campaign against tuberculosis. Dr. Horace W. Conrad, Guthrie, was elected president; W. E. Brooks, Shawnee, secretary; and Dr. Riley A. Ransom, Sewell, treasurer.

SOUTH CAROLINA

Student Magazine is Issued.—The first issue of the *Aesculapian*, a monthly journal issued by the students of the Medical College of the State of South Carolina, Charleston, appeared November 18.

State Board of Charities Needed.—At the state convention of charities and corrections, which met in Columbus, November 19, a resolution was adopted asking the legislature to establish a state board of charities.

Personal.—Drs. Edgar A. Hines, Seneca, and William Eggleston, Hartsville, have been appointed members of the executive committee of the State Board of Health, vice Dr. J. Adams Hayne, Greenville, and Dr. James Evans, Florence, deceased. ——Dr. J. Sumter Rhame, Charleston, has returned from abroad.——Dr. A. Robert Taft has been elected professor of materia medica in the Medical College of South Carolina, Charleston, vice Dr. John Forrest, resigned.

Society Meetings.—At the annual meeting of the Fourth District Medical Association, held in connection with that of the Pickens County Medical Association at Easley, November 15, Dr. William A. Tripp, Easley, was elected president; Dr. Curran B. Earle, Greenville, vice-president, and Dr. Ernest W. Carpenter, Greenville, secretary-treasurer.——At the annual meeting of Lexington County Medical Society, held in Lexington, October 4, Dr. Frank R. Geiger, New Brookland, was elected president; Dr. Rufus E. Mathias, Irmo, vice-president; and Dr. James J. Wingard, Lexington, secretary (reelected).

PENNSYLVANIA

Tuberculosis Mortality.—According to a report issued by the State Department of Health, November 24, the deaths from tuberculosis reached 10.211 in 1908, a decrease of 614 from the number reported in 1907. The report shows that the average age at death was 35.5 years. Sixty-six per cent. of all deaths from this cause occurred between the ages of 25 and 64.

Hospital Suit Dismissed.—On November 24, Judge Brommall, of Media, non-suited the damage cases of Joseph Gallagher and Charles Firth against the Chester Hospital, on the ground that a public charitable institution is not responsible for the negligence of its agents, servants or employees. Legal action, he said, could be taken against the parties responsible but not against the institution.

Tuberculosis Sanitarium for Teachers.—A private sanitarium for the treatment of tuberculosis is to be established at Mount St. Michaels' Seminary, Berks county. The institution is to be erected on a tract of 52 acres of land, 600 feet above sea level. The sanitarium will be devoted exclusively to the treatment of tuberculosis in sisters teaching in the Roman Catholic parochial schools of Pennsylvania.

Personal.—Dr. F. R. McGrew, of Carnegie, was recently seriously injured by a collision between his automobile and a railway train.——Dr. Orlando Logan, Girard, the oldest physician in the Erie County Medical Society, has been presented with a cane by the society.——Dr. Edward B. Mathiot, Pittsburg, was seriously injured in a runaway accident November 23.——Dr. W. H. Chambers has succeeded Dr. W. M. Downey, resigned as a member of the board of health of McKeesport. ——Dr. Benjamin Thompson, Landenburg, is ill with cerebral hemorrhage.——Dr. Frederick A. Rupp has resigned as a member of the Lewistown Board of Health.

Philadelphia

Build Nurses' Home.—Work is to be immediately started on a four-story building to be used as a nurses' home at the Philadelphia General Hospital to cost $13,000.

Personal.—A destructive fire occurred in the home of Dr. John K. Mitchell, November 22, the damage amounting to about $5,000.——Dr. Edw. E. Montgomery was the guest of honor at the regular meeting of the Buffalo Academy of Medicine, November 26.

Bequests.—The will of the late Rebecca Hay bequeathes $20,000 to the Presbyterian Orphanage and $10,000 to the Presbyterian Hospital for the support of free beds.——By the will of the late Anna J. Van Reed of Reading, the Medico-Chirurgical Hospital receives $13,000.

The Alvarenga Prize.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, amounting to about $180, will be made on July 14, 1910, provided that an essay deemed worthy of the prize shall have been offered. Essays intended for competition may be on any subject in medicine, but cannot have been published. They must be typewritten, and must be received by the secretary of the college on or before May 1, 1910. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. The successful essay or a copy of it is to remain in possession of the college; other essays will be returned on application within three months after the award.

TENNESSEE

Health Day.—In accordance with the annual custom, November 19 was observed as public health day throughout the state. Literature was sent by the state superintendent of education to all schools, and addresses were made at the various schools by physicians on that day.

Personal.—Dr. Charles F. Forgey, Columbia, who has been a patient in St. Thomas Hospital, Nashville, has returned home. ——Dr. Arthur H. Gray, Nashville, has been made superintendent of the new hospital at Seattle, Wash.——Dr. James T. Jones, Jackson, has been elected president of the city board of health.

Medical College in Hands of Receiver.—The Tennessee Medical College, Knoxville, now known as the Medical Department of Lincoln Memorial University, is said to have been placed in the hands of a receiver, November 2, by the chancery court, following the filing of a bill by several creditors of the institution. Dr. Walter S. Nash, Knoxville, was named as receiver.

Knoxville Antituberculosis Society.—At a meeting of the board of directors of the Knoxville Association for the Prevention and Cure of Tuberculosis, November 1, it was decided to apply for a charter of incorporation so as to legalize the society and place it on a firmer foundation. Dr. William R. Cochrane, secretary of the city board of health, was elected a director, vice Dr. Chalmers Deadrick, resigned.

TEXAS

Quarantine Raised.—By proclamation of the governor, the quarantine against ports south of 25 degrees north latitude was raised November 1.

Medical Students Issue Paper.—The *Microbe*, a monthly publication issued by the students of the Medical Department of Fort Worth University, made its initial appearance November 1.

Personal.—Dr. Paul Renger, city physician of Hallettsville, has been appointed physician for Lavaca county.——Dr. Zachary T. Scott, Clifton, has succeeded Dr. Lewis B. Bibb, resigned, as registrar of vital statistics of the state——Dr. Cyrus B. Weller, Austin, has been appointed assistant city health officer.

Innovations Advocated.—Superintendent Nichols of the Southwestern Insane Hospital, San Antonio, in his annual report, recommends the building of an east wing on the infirmary to cost $6.000; the erection of a natatorium and bath house to cost $12,000, and the purchase of a sight-seeing motor car with seating capacity of twenty-five, for the use of patients.

Constitutionality of Medical Law to Be Tested.—The constitutionality of the one-board medical act, passed by the thirtieth legislature, is to be tested in the United States Supreme Court. Presiding Judge Davidson of the court of criminal appeals, on November 9, granted a writ of error to the United States Supreme Court in the case of Ira Collins, El Paso, who was fined for practicing osteopathy without having obtained a license from the board. The court held that osteopaths, although they do not use medicine in practice, come within the provisions of the act.

Elect Officers.—At the annual meeting of the Northeast Texas Medical Association, held in Marshall, November 16, Dr. Holman Taylor, Marshall, was elected president; Dr. Walter J. Matthews, Mount Pleasant, vice-president; Dr. Robert H. T. Mann, Texarkana, secretary; and Dr. Charles A. Smith, Texarkana, treasurer. The next meeting of the association will be held in Texarkana.——At the meeting of the Seventh District Medical Society in Austin recently, Dr. Washington A. Harper, Austin, was elected president, vice Dr. Matthew A. Taylor, Austin, deceased.——Wise County Medical Society, at its annual meeting, held in Decatur, November 18, elected Dr. John A. Embry, Decatur, president; Dr. Elden H. Foster, Bridgeport, vice-president; Dr. John F. Ford, Decatur, secretary; Dr. Ambrose C. Bramlett, Decatur, treasurer; Dr. B. M. Jones, Boyd, censor, and Dr. Leopold H. Reeves, Decatur, delegate to the state association.——The Lone Star State Medical, Dental and Pharmaceutical Association held its annual meeting in Houston, November 9-11, and elected the following officers: President, Dr. Napoleon J. Atkinson, Greenville; vice-president, Dr. Russell F. Ferrill, Houston; secretary, Dr. Richard T. Hamilton, Dallas; assistant secretary, N. F. Wallace, Fort Worth; and treasurer, Miss A. E. Hughes, Clarksville, and chairmen of sections, Dr. Benjamin R. Bluitt, Dallas, surgery; Dr. William T. Hughes, Fort Worth, practice of medicine; Dr. Felix A. Bryan, Dallas, gynecology; Dr. Rufus S. Childs, Houston, tuberculosis; Dr. Mary S. Moore, Galveston, obstetrics; Dr. William M. Drake, Marshall, pathology; Dr. Ransom B. Barnes, Cleburne, genitourinary diseases; Dr. Henry E. Lee, Beaumont, hygiene; H. M. Whitey, Houston, dentistry; and G. W. Lemons, Fort Worth, pharmacy. Austin was selected as next place of meeting.

VIRGINIA

Medical Faculty Meets.—At the annual meeting of the Petersburg Medical Faculty, November 19. the following officers were elected: President, Dr. Leverett S. Early; vice-presidents, Drs. W. Preston Hoy, and Hampden A. Burke; secretary-treasurer. Dr. William C. Powell; corresponding secretary, Dr. J. R. Beckwith, and court medical, Drs. Samuel A. Hinton, Franklin W. Hains, William H. Crockford, Jr., J. Bolling Jones, and Daniel D. Willcox.

Personal.—Dr. George K. Sims, Richmond, was operated on November 17. at the Memorial Hospital.——Dr. Truman A. Parker. Richmond, has been elected executive secretary of the Virginia Antituberculosis Society.——Dr. Charles R. Grandy, Norfolk, has been elected a vice-president of the Virginia State Antituberculosis Society, and Dr. Charles P. Wertenbaker. U. S. P. H. and M.-H. Service, Norfolk, a director.——Dr. John W. Winsten, Norfolk, has been appointed captain and assistant surgeon, N. G. Va.

State Antituberculosis Association Organized.—The Virginia Antituberculosis Association was organized at Richmond, November 6. Dr. William F. Drewry, Petersburg, was temporary chairman, and Dr. Albert W. Freeman, Richmond, temporary secretary. The following permanent officers were elected: President, Capt. W. W. Baker, Hallsboro; vice-presidents, Governor-elect William Hodges Mann, Governor Claude A. Swanson, President Edwin A. Alderman of the University of Virginia; Dr. Elliott T. Brady. Abingdon; Right Rev. Augustin Van de Vyver, Bishop of Richmond; Dr. Rawley W. Martin, Lynchburg; Dr. Stephen Harnsberger, Catlett; John S. Bryan, Richmond; and Dr. Charles R. Grandy, Norfolk; secretary, Miss Ann Gulley. Richmond; treasurer, Thomas W. Scott, Richmond; and directors, Dr. Charles P. Wertenbaker, U. S. P. H. and M.-H. Service, Norfolk; John T. Maginnis, Radford; Dr. William F. Drewry, Petersburg; George W. Wright, Marion; Mrs. John W. Hayes. Petersburg; Rev. J. T. Mastin, Richmond; Mrs. D. W. Reade, Charlotte; Dr. Ennion G. Williams, Richmond; Dr. Ernest C. Levy, Richmond, and Miss S. H. Cabiniss, Richmond.

WASHINGTON

Local Physicians Elect.—At a meeting of the North End (Seattle) Medical Society, October 29, the following officers were elected: Dr. Walter K. Seelye, president; Dr. Clarence W. Knuedson, vice-president; and Dr. J. Tate Mason, secretary-treasurer.

Hospital Contract Awarded.—The general contract for the erection of the buildings for the Vancouver Branch of the Sisters of Charity of the House of Providence has been awarded to contractors in Vancouver for $111,000. The building is to have a frontage of 160 feet, with a width of 48 feet, a central wing projecting 72 by 35 feet. The building will be practically fireproof.

Personal.—Dr. Elmer M. Brown, Tacoma, has been commissioned colonel and assistant surgeon in the National Guard of Washington, and Dr. John S. Kulp, major, medical corps, U. S. Army, retired, has been commissioned lieutenant colonel and chief surgeon of the medical corps.——Dr. C. R. Duncan is reported to be critically ill with typhoid fever at the home of his sister in Cle Elum.——Dr. Joseph L. Lane, physician at the state penitentiary, Walla Walla, has resigned and will begin practice in Seattle.

WEST VIRGINIA

Free Antitoxin.—The State Board of Health, at its meeting in Parkersburg, November 10, decided to place antitoxin for the treatment of diphtheria in every county in the state for the benefit of those unable to purchase it.

Antituberculosis League Organized.—The Antituberculosis League of Moundsville was organized November 15, with V. A. Weaver, chairman, and A. R. Bennett, secretary. It was arranged to hold an antituberculosis exhibit during December. Drs. LeRoy S. Hennen, John C. McCollough, and Joseph A. Striebach were appointed a committee of arrangements.

Medical Society Meeting.—The Grant-Hampshire-Hardy-Mineral Counties Medical Society held its annual meeting in Burlington, October 22, and elected the following officers: President, Drs. James W. Shull, Romney; vice-presidents, Drs. William T. Highberger, Maysville, Robert W. Love, Moorefield, George H. Thomas, Romney, and Hugh Strachan, Blaine; secretary, Dr. W. Holmes Yeakley, Keyser; treasurer, Dr. Walter M. Babb, Keyser, and censors, Drs. Glenn Mooman, Petersburg, George H. Thomas, Romney, R. W. Love, Moorefield, and Lloyd L. Edgell, Keyser.

WISCONSIN

Marinette County Physicians Meet.—The annual meeting of the Marinette County Medical Society was held in Marinette, November 9, when the following officers were reelected: President, Dr. H. F. Schroeder; vice-president, Dr. Simon Bergland; and secretary-treasurer, Dr. Sherman E. Wright, all of Marinette. Dr. A. F. Lyon Campbell, Dunbar, was elected censor.

Personal.—Dr. L. Rock Sleyster, Appleton, has been appointed physician to the state penitentiary, Waupun, vice Dr. Moore, who has been appointed superintendent of the State School for the Blind, Janesville.——Dr. Mazyck P. Ravenel, Madison, has been reelected president, Dr. Hoyt E. Dearholt, Milwaukee, executive secretary, and Dr. Clarence A. Baer, Milwaukee, secretary of the Wisconsin Antituberculosis Society.——Dr. L. Ward Alger, the oldest practitioner of LaCrosse, announces that he will retire from practice and move to Everett, Wash.

Officers of Hospital for Chronic Insane Elected.—At the annual meeting of the trustees of the Milwaukee County Asylum for Chronic Insane, Wauwatosa, Dr. William F.

Beutler was elected superintendent and medical officer for the fifteenth consecutive term, and the following members of the honorary medical and surgical staff were reelected: Drs. Gustav A. Kletzsch, Uranus O. B. Wingate, A. Hamilton Levings, Ernest C. Grosskopf, Louis Fuldner, Christian H. Beyer, Franklin H. Hagerman and Gustavus I. Hogue, Milwaukee, and Drs. Ferdinand M. Scholz, Moses J. White, Richard Dewey, and Edward A. Schmitz, Wauwatosa.

CANADA

Personal.—Dr. Oscar Klotz, for seven years assistant in pathology to Prof. John G. Adami at McGill University, Montreal, has been appointed professor of pathology in the University of Pittsburg and will enter on his new duties about the New Year.——Dr. H. H. McIntosh has resigned from the superintendency of the Vancouver General Hospital and Dr. W. A. Whitelaw succeeds him.——Drs. George A. Kennedy, McLeod, Alta.; Thomas J. Costello, Calgary, Alta.; and Robert G. McDonald, Sarnia, Ont., have gone abroad.——Dr. George H. Parke, Quebec, has been appointed surgeon to the garrison at St. Johns, P. Q., vice Dr. Chevalier, resigned.——Dr. Hugh A. McColl, Milton, Ont., has returned from Europe.

Dominion Registration.—Dr. Thomas G. Roddick called a meeting of the committee of the Canadian Medical Association on Dominion Registration in Montreal, November 16. British Columbia, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia and Prince Edward Island were represented and the following medical councils or provincial examining boards sent delegates to confer with this committee: Nova Scotia, New Brunswick, Quebec and Ontario. The meeting was called to consider the resolution practically unanimously passed at the annual meeting of the Canadian Medical Association held in Winnipeg in August, which provided that the Roddick Act be put in force whenever five or more provinces agreed to the provisions of the act. It is understood that the meeting was an entirely satisfactory one and that steps will be taken to have amendments made to the Canada Medical Act of 1902 at the present session of the federal parliament.

Tuberculosis.—The Royal Edward Institute for the care of patients suffering from tuberculosis in Belmont Park, Montreal, was opened by King Edward October 22. Addresses were made by Sir George Drummond, president of the institute; Sir Charles Fitzpatrick; Dr. R. W. Philip, Edinburgh, Scotland, and others.——The Lake Edward (Que.) Sanatorium for the care of patients suffering from tuberculosis was opened October 14. The institution has accommodation for about thirty patients and is intended only for incipient cases. Dr. William E. Ainley, Lachine, has been appointed medical superintendent.——The buildings of the Ninet's Sanatorium, Brandon, are nearly completed and will be ready for occupation about Christmas.——A tuberculosis commission from New Brunswick, consisting of Drs. John R. McIntosh and A. F. McAvenney, St. John, Dr. Robert L. Botsford, Moncton, and Dr. Bourk of Kent county, has recently been in Boston on a tour of investigation and study of the tuberculosis problem in that city.

Hospital News.—At the annual meeting of the Montreal Maternity Hospital held recently, Dr. Andrew MacPhail was made a life governor. Owing to the unsatisfactory financial condition of the hospital, an appeal will be made to the public for better and larger financial support.——The Alexandra Hospital for contagious diseases, Montreal, recently appealed to the public for funds to wipe out its mortgage indebtedness of $100,000, of which amount $30,000 was received. The work in connection with this hospital is increasing very rapidly. During the first ten months of 1908, 367 patients were admitted, while for the corresponding period of 1909, 561 have been received.——Regina, Sask., is erecting a new hospital at a cost of $100,000, to be finished by December, 1910.——Calgary, Alta., is erecting a new hospital in which fraternal societies will furnish wards, while several private individuals will furnish rooms.——The Provincial Royal Jubilee Hospital, Victoria, B. C., is erecting a new Maternity Home.——A new hospital for the insane is being erected at Coquitlam, B. C. It will be called Mount Helmcken, after Dr. J. S. Helmcken, Victoria, dean of the medical profession of British Columbia.

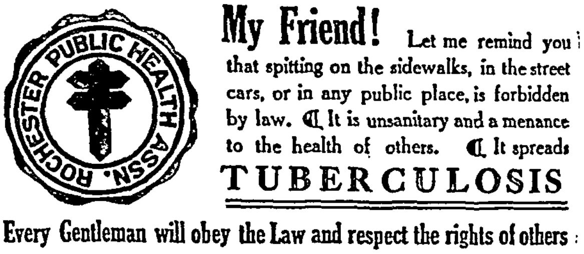
GENERAL NEWS AND COMMENT

Surgeons and Gynecologists to Meet.—The twenty-second annual session of the Southern Surgical and Gynecological Association will be held in Hot Springs, Va., December 14-16, under the presidency of Dr. Stuart McGuire, of Richmond, Va.

Interurban Officers.—Officers of the Interurban Academy of Medicine, whose membership includes physicians of Duluth, Minn., and Superior, Wis., were elected at the annual meeting held November 17, in Superior. Dr. Charles H. Mason, Superior, was elected president; Dr. Robert Graham, Duluth, vice-president; Dr. Thomas J. O'Leary, Superior, secretary-treasurer, and Dr. Edward L. Tuohy, Duluth, censor.

Mexican Medical Congress.—The fourth Mexican National Medical Congress is to be held in the City of Mexico, Sept. 19-25, 1910. The congress consists of physicians, druggists, veterinarians, dentists and sanitary engineers. The congress will award a prize of 1,000 pesos ($200) to the author of the address which may be declared the best, by a jury consisting of five individuals appointed by the president and vice-presidents of sections. The president of the congress is Dr. Porfirio Parra, and the secretary, Dr. Luis E. Ruiz, both of the City of Mexico.

To Discourage Spitting.—The Rochester (N. Y.) Public Health Association has printed quantities of a small yellow slip containing the accompanying statement, printed in red and black. These are for free distribution by policemen, street car men and others who are interested in the fight against promiscuous spitting. It is hoped to suggest to offenders the necessity of proper observance of sanitary laws. This organization, whose address is 32 South Washington street, requests information, from others who have tried this method, as to the results observed.



My Friend! Let me remind you that spitting on the sidewalks, in the street cars, or in any public place, is forbidden by law. ¶ It is unsanitary and a menance to the health of others. ¶ It spreads

TUBERCULOSIS

Every Gentleman will obey the Law and respect the rights of others.

Tri-State Societies Meet.—The Tri-State Medical Association of Mississippi, Arkansas and Tennessee held its twenty-sixth annual convention in Memphis, November 16-18, under the presidency of Dr. William H. Deaderick, Marianna, Ark. The following officers were elected: President, Dr. James S. Rawlins, Danceyville, Tenn.; vice-presidents, for Mississippi, Dr. William L. Howard, Greenville; for Arkansas, Dr. John L. Jones, Searcy, and for Tennessee, Dr. Nicholas S. Walker, Dyersburg; secretary, Dr. J. H. Eugene Rosamond, Memphis (reelected); and treasurer, Dr. James A. Vaughan, Memphis (reelected). The association will hold its 1910 meeting in Memphis.——The Tri-State Medical Association of Arkansas, Louisiana and Texas held its annual session in connection with that of the Northwest Texas Medical Society at Marshall, November 16 and 17. The following officers were elected: President, Dr. Robert H. T. Mann, Texarkana, Ark.; vice-presidents, for Louisiana, Dr. Mathias M. Collins, Hosston, and for Texas, Dr. John O. McReynolds, Dallas; secretary, Dr. Jacob M. Bodenheimer, Shreveport, La.; and councilors, Drs. Holman Taylor, Marshall, Texas; Joseph E. Knighton, Shreveport; and Frederick W. Youmans, Lewisville, Ark. Shreveport was selected as the next place of meeting.

American Scientists to Meet.—The sixty-first annual meeting of the American Association for the Advancement of Science, and the eighth of the convocation week meetings, will be held in Boston, December 27 to January 1, on the invitation of Harvard University and the Massachusetts Institute of Technology, under the presidency of Dr. David Starr Jordan, president of Leland Stanford, Jr., University, Cal. The following societies have indicated their intention of meeting in Boston during convocation week: American Society of Naturalists, American Mathematical Society, Association of American Geographers, Geological Society of America, Association of Economic Entomologists, American Nature-Study Society, Association of American Anatomists, American Chemical Society, American Society of Vertebrate Paleontologists, American Society of Zoologists, American Physical Society, American [illegible] on, American Physiological Society, [illegible] Association, Entomological Society of America, American Folk-Lore Society, American Federation of Teachers of the Mathematical and the Natural Sciences, American Society of Biological Chemists, Sullivant Moss Society, Botanical Society of America, Society of Americar [illegible] tion of Mathematical Teachers in N[illegible] ociation of Physics Teachers, Physics [illegible] D. C., American Phytopathological Society, American Alpine Club, and American Breeders' Association.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Nov. 11, 1909.

Quacks on Trial

In the last few weeks two suits against quacks in Germany have attracted general attention. The first suit was for fraud against a spiritualist who had swindled the complainant out of $24,000 (100,000 marks), and who was sentenced to several months' imprisonment.

Still greater interest will be felt in a prosecution of the so-called clay pastor (*Lehmpastor*) Felke. In the Rhine country, a preacher named Felke for some years treated patients with water, air, light and earth, particularly with clay for local baths and poultices. He claimed to diagnose all possible diseases at the first look by certain changes, especially discoloration, of the iris. The fineness of this diagnosis is so remarkable that the pastor, as he stated at the trial, could tell whether any one ate much butter on his bread, whether the grandfather of the patient had had the itch, whether one had eaten an egg, and much more of the same kind. Thousands, among them well-to-do people from the better circles of society, consulted him.

One day he overlooked an appendicitis in a young man of 18 and by improper treatment caused his death. On trial for manslaughter by criminal carelessness, the court at Cleve acquitted him; the state's attorney appealed and the highest court in Germany, the imperial court, reversed the verdict and ordered a new trial in the county court at Krefeld. The height of excitement was reached when an opportunity was given the pastor, at the motion of the defense, and naturally with the support of the unprejudiced medical experts, among which were the renowned Professor Garré of Bonn, to exercise his eye diagnosis on twenty patients of the Krefeld city hospital. Not a single diagnosis was correct. Serious diseases were not recognized and symptoms were diagnosed which were not present. Even the fact that one patient was blind in one eye escaped the pastor.

The court decided that Felke had made a false diagnosis in the case involved in the trial and by prescription of improper measures had caused the death of the patient. In regard to carelessness, the court said the eye diagnosis was not reliable. However, inasmuch as the apparent successes of the treatment established by Felke and the respect of his patients extending almost to idolatry had confirmed him in the belief that he had the capacity of diagnosing disease correctly, the court gave an acquittal!

The state's attorney will appeal and there is no doubt that the imperial court will again reverse the decision. The imperial court has repeatedly expressed the view that quacks are responsible for their mistakes and liable to punishment in the same way as physicians. This is most distinctly stated in an opinion given in 1900, saying: "It is clear that an experience which dispenses with all scientific tests and basis for the connection between treatment and results has only the value of a guess and must always reckon with the danger of error and of mistakes and their consequences and that for this only the judgment of ordinary human intelligence is necessary. Whoever disregards this neglects his own capacity for thought and whoever undertakes the medical treatment of patients without having obtained the necessary scientific education is acting with a disregard of the attention necessary for such an employment which it is his duty to give it, i. e., is acting carelessly. Whoever exercises the healing of disease as a trade must acquaint himself with the rules of this science and must follow them if he is to escape the accusation of criminal carelessness against the life and health of another. And if he does not do this he is responsible for his offenses and their consequences."

On this principle the quack pastor will probably be convicted at the next trial. It is even more certain that, in spite of this, fools will still persist in their foolishness and quacks still find their supporters.

The Cholera

The cholera cases in East Prussia have not yet entirely disappeared. From the middle of July to the end of October, 33 cases have occurred, with 12 deaths. The government has instituted stringent measures requiring inspection of corpses by physicians, warning against the use of river water, supervising marine and river traffics (as without doubt the invasion of cholera from Russia occurs by water), installing steam disinfection apparatus at all quarantine stations and at the two cholera hospitals, and enforcing medical examination and baths for emigrants and immigrants and disinfection of their linen and clothing. The Russian raftsmen are returned to the border in closed cars.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Nov. 11, 1909.

Adulteration of Foodstuffs

The report on the budget of the Department of Agriculture gives an extensive review of the functioning of the service for the repression of fraud. During the year 1908, there were 67,726 samples of foods and drinks seized, out of which 14.4 per cent. were regarded as suspicious. Except in the Department of the Seine and some places where there were special agents, the seizures were made without discrimination. Sometimes the seizures are made on suspicion, and more frequently at random by way of control. In 1907 almost 20 per cent. of the samples seized were reported to the courts. In 1908 this average was lowered to 14.4 per cent., then to 14.1 per cent. in the first semester of 1909. The improvement was much more important in the provinces, where the average of suspicious samples was lowered from 18.3 to 10.4 per cent., but in Paris the average has risen from 23.7 per cent. to 31.6 per cent. At the period when the service for the repression of fraud began to act, the most frequently adulterated products were oil, milk, vinegar and wine. One of the most extensive frauds of recent years has been practiced in regard to mineral waters, both in the concerns which supply the groceries and in many of the most fashionable restaurants in Paris. The seizures of mineral waters began only at the end of the year 1907. The first case dates from Dec. 17, 1907, when a restaurant put ordinary water on sale in bottles bearing the trade-mark of a well-known mineral spring. In the course of 1908, numerous frauds in mineral water were brought to light in various restaurants which sold ordinary Paris drinking-water under the names of various mineral waters. From seizures made at groceries the service for the repression of fraud ascertained that the trade-marks of certain mineral waters have been tampered with. A strict surveillance was then placed over the wholesale dealers and at two wholesale establishments complete outfits for the manufacture of a mineral water were found. From October 22 to December 21 45,888 bottles of fraudulent water were sent out from the factory. In another factory the agents of the service for the repression of frauds found workmen occupied in filling bottles with "mineral water" that they were drawing from iron casks. The amount of ordinary water consumed by this concern, as registered on the meter, was, in 1907, 331,219 gallons (1,254,000 liters), and in 1908, 447,436 gallons (1,694,000 liters). The culprit confessed that he had made with ordinary water and bicarbonate of soda over 650,000 bottles of counterfeit mineral water.

Comparative Sanitary Conditions of the Troops at Paris and at Berlin

Last June, Dr. Lowenthal read before the *Académie de médecine* a paper on the comparative sanitary condition of the French and German armies from 1902 to 1906, from which it appeared that the general mortality in the French army was much larger than in the German army (THE JOURNAL, July 10, 1909, liii, 126). On November 9, Lowenthal placed the conclusion of his work before the academy, showing the mortality and morbidity of the garrisons of Paris and Berlin. This comparison is still more unfavorable. The general mortality of the army of Berlin is 10.5 per cent. lower than that of Paris. The morbidity from scarlatina in the army at Berlin is 25 per cent. lower and the mortality is 150 per cent. lower than that at Paris. In five years the number of measles patients in the Paris garrison is twice as numerous as in the whole German army; the number of deaths is seven times as large. The troops at Paris, if as numerous as the troops at Berlin (the garrison of Paris is composed of only 45,000 men against 65,700 men at Berlin) would furnish as many deaths from typhoid fever as the whole German army. The sanitary condition of the forces at Paris is deplorable not only as compared to that of the forces at Berlin, but even when compared with that of the army of the interior. Out of twenty corps of which the army of the interior is composed, the troops at Paris occupy the eighteenth place in the ascending scale of mortality and morbidity. The insalubrity of Paris, which increases each year because of the continual upheavals of the soil, is the primary cause of the unsatisfactory health of the troops, but another cause is the deplorable condition of the barracks, of which the greater number in Paris date from the 16th and 17th centuries, and meet the demands of modern hygiene hardly better than the cannons and guns of those periods satisfy the demands of modern warfare.

Mutual Benefit Societies and Social Hygiene

The *Alliance d'hygiène sociale* has taken advantage of the congress of the *Fédération nationale de la mutualité* which is now in session at Paris to draw the attention of the mutual benefit societies to the part which, even in their own interests, they ought to take in promoting social hygiene. M. Léon Bourgeois, former cabinet minister and president of the alliance, undertook to show the members that such societies would be acting wisely in their own interests if they employed part of their reserve funds (at present amounting to about 150,000,000 francs or $30,000,000) in the preservation of public health. In aiding the construction of cheap dwellings, for example, the mutual benefit societies would make a particularly advantageous investment, for they would then hinder one of the principal causes of long illnesses, particularly tuberculosis, the victims of which are such a heavy burden on the treasuries of the benefit societies. It was unanimously decided to form a permanent social hygiene commission of the mutual benefit societies, which will try to obtain from legislators and public authorities the right to use part of the reserve funds of the mutual aid societies in works of social hygiene, as has been done in Germany, where the insurance societies participate with so much success in the strife against tuberculosis. A particularly urgent feature is organization of insurance for chronic partial invalids, who, for lack of continued care, end by becoming permanent charges on the mutual benefit societies or on the public charities (*Assistance Publique*). The combat against unhealthful dwellings should also have an important place in the activities of the benefit societies, the improvement of the dwellings resulting in the decrease of the mortality from tuberculosis. If this double task cannot be accomplished by local societies, it is not beyond the powers of the department federations.

Election of Dr. Wurtz to the Académie de médecine

In its session of November 9, the *Académie de médecine* elected Dr. Wurtz an honorary member in the Section of Hygiene, Legal Medicine and Sanitary Police in place of Dr. Motet, who died last March. Dr. Wurtz, son of a celebrated chemist, is about 50 years old. He was a pupil of the late Professor Strauss, and when very young became successively professor *agrégé* at the Paris medical school and physician of the hospitals. He is known especially for his works on colonial pathology which he studied in the colonies, especially in Africa. One of the last missions that he accomplished was in Abyssinia, where for two years he was called on to attend the Emperor Menelik and his suite.

An Apostle of Repopulation

A few days ago Senator Piot died in his eighty-first year. He was one of those who first raised the cry of alarm in regard to the slow progressive depopulation of France. From his entry to the senate in 1897, M. Piot cooperated with the efforts of the statistician, Dr. Bertillon, against the decrease of the birth-rate in our country compared with the increase in other nations. He wrote many pamphlets and published two books, "Enquiry Into the Depopulation of France" (1899) and "Depopulation" (1903). All the acts of his political life were toward a single end, an effort against depopulation. To this end he proposed a bill for a special tax on bachelors and childless citizens; he obtained the creation of an extraparliamentary commission for the study of depopulation, the work of which unfortunately was interrupted by the lack of provision for its expenses. M. Piot also carried on an energetic campaign in favor of large families, which made him one of the most prominent political characters and won him the title of the "apostle of repopulation."

First Congress of Public Health Officers

A few days ago the first congress of sanitary physicians was held at the Pasteur Institute. It was due to the initiative of the Society of Public Medicine and Sanitary Engineering and was composed of public physicians and officers charged with the administration of the law of 1902 in regard to the protection of public health. Two of the questions discussed were of particular importance, namely, that of the reporting of infectious diseases, and that of the rôle of the departmental hygienic inspection. The congress resolved that the reporting of infectious diseases should be obligatory jointly on the head of the family and on the physician; also that the reporting of measles should be compulsory, disinfection being optional, and done at the demand of the family or of the physician. Dr. J. Courmont, professor of hygiene at the Lyons medical school, argued that the optional departmental service of hygienic instruction ought to be made compulsory for each department. The inspector ought to be a doctor of medicine and selected by competitive examination. His function should be to direct the service of disinfection and vaccination, to keep the sanitary records of the communes, to inspect unhealthful occupations, etc. The congress approved these conclusions. At the close of the congress a special commission met immediately to study the best means to bring about the necessary close relations between public physicians, sanitary officers and practicing physicians. The following are the conclusions of this commission:

1. It is important to improve the relations between practicing physicians and sanitary officers. The latter ought to furnish free when practicing physicians request it, everything necessary for isolation and disinfection.
2. Practitioners should have at their service laboratories where they can obtain free for their poor patients bacteriologic diagnoses in suspect cases. As moreover there are paying cases in which a practitioner may need bacteriologic diagnoses, but does not desire to inform the family, and as the service rendered is a public one, in such cases bacteriologic diagnoses should be furnished free to the practitioner.
3. Sanitary officials should try to reach an understanding with the physician of a case and to cooperate with him.
4. The practitioner in charge of the case should be invited to communicate his diagnosis as soon as possible and to point out suspected cases which are sometimes the most interesting from point of view of prophylaxis.

Congress of Sanitation and Salubrity of Dwellings

The third national congress of sanitation and salubrity of dwellings which has just been held at Paris, of which I mentioned the program in a previous letter (The Journal, Oct. 16, 1909, liii, 1304) also took up modifications to be made in the law of 1902 in regard to public health. It especially asked resolutions to the effect that the declaration for the disinfection of buildings in cases of contagious diseases ought to fall on the head of the family; it also resolved that a bill be brought forward authorizing expropriation on account of insalubrity, the expenses of expropriation to fall on the expropriated owner.

Prosecution for Delayed Report of a Case of Typhoid Fever

Dr. Forquin, a physician in Mirecourt (Vosges) was recently condemned to a fine of $10 (50 francs) for infringing the law in regard to the reporting of epidemic diseases. He had been called on April 5 to see a patient whose case he reported on April 27 as typhoid fever. He was prosecuted for his delay. He pleaded that his diagnosis had not been certain until the night of the 26th, and that consequently he was not able to make a report earlier. The court of Nancy, to which appeal was taken, reversed the decision of the lower court and acquitted Dr. Forquin.

The Ultra-Microscope and the Cinematograph

Much interest has recently been shown in a communication by Dr. Comandon to the *Académie des Sciences* in regard to the application of the cinematograph to the dark field microscope. According to Dr. Doyen cinematographic images of microscopic objects were made in London in 1906 by a distinguished naturalist, Mr. Marc Duncan.

International Conference Against Saccharin

On November 15, the international conference for the repression of the use of saccharin opened in Paris. Professor Bordas was elected president. The governments represented were those of France, Germany, Austria, Belgium, Greece, Hungary, Italy, The Netherlands, Portugal, Russia and Switzerland. The first session was devoted primarily to the examination of existing legislation for the repression of the sale and use of saccharin and similar sweetening substances.

Courses on Care of Infants

Dr. Maygrier, head accoucheur at the Maternité, has just inaugurated at the Fondation Pierre Budin (The Journal, June 19, 1909, lii, 2006) courses in "puericulture" from the earliest ages. This course will be completed in ten lessons and there will be several series during the school year.

Death of Professor Mayet

Dr. Octave Félix Mayet, former professor of general pathology at Lyons medical school, former physician of the hospitals of the same city, has just died, aged 74. He was the author of a treatise on medical diagnosis and semeiology in two volumes, published in 1897.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Nov. 20, 1909.

Short Sight in the Upper Classes

In delivering his presidential address to the Illuminating Engineering Society, Prof. Sylvanus Thompson, the eminent physicist declared that there was a greater percentage of short sight among the upper classes than among the poor. His explanation is that the illumination of the schools and colleges in which the children of the former class study, is defective and thus that in using their eyes the children are actually forced into short-sightedness. He reviewed the science of illumination from the days of rush-lights and candles to the present era of electric light and incandescent mantles, and he made a strong plea for an international unit of light. The present unit of so many candle power is vague and indefinite. It is now possible by the photometer to define the measurement of light. Why, therefore, should it not be employed for the measurement of light? There was no reason why schools and other public buildings should not be properly illuminated on a scientific basis. The factory acts contained no regulation except that the building should be "adequately lighted." What did adequate lighting mean? The health authorities had not a single photometer to ascertain whether buildings were adequately lighted or not. The only country in Europe which had sensible regulations on the point was the little kingdom of Holland.

Disease and Crime

The doctrine of the late Professor Lombroso that crime is due to an abnormal physical constitution of the criminal has not obtained much support in this country. The following extracts from the prison commissioners' report for England and Wales, 1909, shows, however, that mental and physical disease bear some relation to crime: "The number of convicted prisoners certified insane during the previous year was 97 men and 38 women, most of whom showed signs of insanity when admitted. There were 259 others listed as feeble-minded. At least 3 per cent. of the inmates of prisons are obviously mentally defective." In 1898 careful observations made of all youths detained in Pentonville (a large London prison) between the ages of 16 and 21 showed a deficiency of both height and weight. Their average height was two inches less than that of the general population and their weight average was fourteen pounds less. No fewer than 26 per cent. of them were afflicted with some disease, deformity, or disablement.

The Queen Alexandra Sanatorium at Davos

A new sanatorium for consumptives has been built under the patronage of the queen at Davos, the well-known Swiss resort for sufferers from that disease. It is to accommodate British patients who cannot pay for the charges of a private sanatorium. As the wooden structures used for sanatoria in England would not be suited for the climate of Switzerland, in which it is necessary to build in solid masonry, alike for durability and safe and efficient heating, the new sanatorium has been built of stone with concrete floors, roof, staircases, and balconies. The walls of the foundations, cellars, and basements are of immense thickness and the main walls are nowhere less than two feet. The building is close to Davotz Platz on the mountain side, about 300 feet above the town of Davos. The pine forest stretches almost to the doors, and affords a variety of sheltered walks. At present 54 patients can be accommodated, but the public rooms, kitchens, etc., have been constructed for the requirements of 120 and the building can be enlarged to furnish additional bedrooms. A new feature of the construction is that each patient will have a separate room divided from the others by a stone wall. As is always necessary in the high Alps, the outside doors and windows are double, but ample ventilation has been provided. The lodgment of dust is guarded against by the rounding off of all corners and angles. The resident staff consists of a medical superintendent, a junior medical officer, a matron, and two trained nurses, all of whom are British.

Compulsory Operations and Workmen's Compensation

As shown in previous letters the Workmen's Compensation Act, which renders employers liable for every accident which may befall a workman in the course of his employment, has caused considerable litigation. One point raised was whether a workman suffering from some disability is entitled to continue to receive a pension if the disability can be removed by an operation to which he refuses to submit. The point was first raised in 1903, when the court decided that no workman could be compelled to undergo an operation. In 1908 the point was again raised in another case when the court decided that the workman ought to have submitted to the operation and that his incapacity arose, not from the original injury, but from his unreasonable refusal to undergo operation involving only a slight risk. About the same time a similar case came before the Court of Appeal in Scotland, in which country the laws differ in many respects from those of England. In this case three out of five physicians recommended the amputation of a workman's second finger, which was crooked as the result of injury and interfered with his work. The court decided that his refusal to undergo operation destroyed his right to any further compensation, because like any reasonable person who wished to be restored to health, he should submit to an operation attended with little risk. A decision in a somewhat similar case has now been given by the English court of appeal in favor of the workman. This man was engaged on board a ship where he met with a serious accident which caused a double rupture. As he was suffering from disease of the kidneys his family physician advised him not to undergo an operation, though this was recommended in hospital. The judge in giving judgment said that the case was most important. The question was whether the man unreasonably declined operation. He could not admit that the man acted unreasonably under the circumstances in following his physician's advice. The judge in the lower court had decided to the contrary on the balance of the medical evidence before him as to whether the operation was reasonably safe or not. But that was not the real question; the point was whether the man had acted unreasonably in refusing to undergo the operation. After the evidence of his own physician his lordship thought that no amount of other medical evidence was relevant. He therefore allowed the appeal. The importance of this judgment is great, for it lays down the principle on which must be decided in future as to what is "unreasonable refusal" to undergo an operation.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Nov. 15, 1909.

Proposed Tax on Alcohol and Mineral Waters

The increased demand for funds for defensive purposes has prompted the minister of finance to suggest, among other taxes, taxes on medicinal waters and alcohol, which would materially hamper the treatment of disease. The tax on alcohol used in the composition of drugs, formerly only about 8 cents per liter or 4 cents per pint is expected to be not less than 20 cents. Pharmacists are already trying to produce remedies free from alcohol. The substitution of glycerin for alcohol has been shown to be possible in a good many prescriptions, so that the result of the increased tax would hardly meet the expectations of the government. Even more marked is public dissatisfaction with the proposed tax on mineral waters. In many places the ordinary water is not always quite reliable; therefore the natural sparkling waters are consumed in this country in enormous quantities; and medicinal waters are an absolute necessity with many persons. The tax would be a heavy burden as, although only 1 or 2 cents are to be levied per bottle, this runs up into high figures when the annual consumption is considered. Therefore, not only medical men, but also the *Curorte*—the health resorts which bottle such waters— have remonstrated. Not only the waters mentioned but all aerated waters, including the common "soda-water" are to be taxed. In one of the numerous mass-meetings to protest against such taxes, one of the speakers, a medical man, hit the nail on the head, saying that it was a wrong policy, if the state wanted to become stronger, to prevent the sick from regaining their health. This tax, together with the constantly rising prices for cereals and meat, is sure to bring down the national health from the comparatively high level it had reached a short time ago. Already some classes of the population have to reduce their annual consumption of meat, as the prices are getting exorbitantly high; on the other side, butter, fat and bread are also much dearer so that in the memorandum addressed to the government, medical bodies have pointed out these points too, which speak against the above-mentioned taxes being made lawful.

Medical Inspection of School Children

In a large number of cities an attempt has been made to ascertain through the public health officers the percentage of healthy and unhealthy children frequenting the public schools within a certain time; the results and conclusions are interesting. Altogether, about 250,000 children have been examined in the months of May, July, October and November (the end and commencement of our school year). Eyes, ears, nose, throat, teeth, condition of joints and bones as well as general health are chiefly examined; the ages of the children were from 6 to 14 years. Only 22 per cent. had normal teeth; those between the ages of 6 and 9, 13 and 14 were especially affected. The eyes were found myopic in only 10.5 per cent., hypermetropic in 3 per cent.; the percentage of both abnormal conditions was fairly constant at all ages, which is rather unexpected as regards the younger children at least. Tonsils were enlarged in 30 per cent., adenoids were present in 20 per cent.; both conditions in about 19 per cent. It could not be ascertained exactly in how many cases removal had been effected previously to examination. A fairly large percentage had chronic rhinitis, without adenoids. In 27 per cent. the nose was not normal, and deviations of the septum seemed to become more frequent in the older children. Affections of the ear were noted in 32 per cent.; mostly a simple catarrh of the tube and the tympanic cavity, while otorrhea was present in about 30 per cent. of the ear patients, that is to say, in about 11 per cent. of all children. Measles, scarlet fever and diphtheria were most often the cause. After-effects of rickets were noted in 20 per cent.; in another 5 per cent. the history allowed the assumption of the disease having been present. Disease of the joints was seen only in 3.5 per cent., mostly in the knee, then in the talocrural joint, then in the fingers (spina ventosa), then in the hip. Only 20 per cent. of all children could be classified as perfectly healthy; in the majority there were combinations of ear and nose and throat, or teeth and throat diseases. Disturbances in the function of the eye and ear were observed in 5 per cent.; of more than two important organs in only 2 per cent. Altogether the national physique would be supposed to be at a very low standard were it not proved that the majority of children outgrow their diseases, except the irreparable conditions of eye, ear and joints.

Pharmacology

THE UNITED STATES PHARMACOPEIA

The Report of the Committee of the American Pharmaceutical Association

It is important that physicians and pharmacists should become acquainted with the views of members of both of these professions in regard to the revision of the Pharmacopeia. We therefore review this committee's report (published in the *Am. Pharm. Assn. Bull.*, November, 1908, iv, 395), as one of the most important contributions from the pharmaceutical side. In regard to the scope and policy of the Pharmacopeia we quote the words of the report:

"The real and immediate interests of physicians and retail druggists should not be overshadowed by those of the large manufacturers, importers, food-officials and others, who desire the Pharmacopeia to be almost a universal standard for chemicals. It is to the best interests of the members of this association that the U. S. P. continue to be what its founders intended it, viz., a medium of communication between the prescribing physician and the dispensing pharmacist. It should not be made a standard for drugs which the retail pharmacist is not called on to dispense except in so far as the quality of the preparations which he does dispense is directly dependent on the quality of the crude drugs. It should not be a standard for articles, the chief uses of which are those of foods, beverages, or flavoring agents. . . . It is to the interest of this association that the Pharmacopeia be made to meet as nearly as possible the present-day needs of the medical profession. Hence we believe that full cognizance should be taken of the fact that the science of medicine is international and that every effort should be made to make the U. S. P. correspond as closely as practicable in strength of preparations, nomenclature, etc., to international usage."

If the views just quoted are followed there can be no possible ground of conflict between the medical and pharmaceutical professions over the revision of the Pharmacopeia. Physicians will probably feel disposed (and with good reason) to leave the question of botanical names to the discretion of others; also to a certain extent, chemical names except in so far as physicians demand that those which are to be generally employed shall be the least cumbersome that are consistent with scientific terminology.

A troublesome question is that of names of mixtures. It is evident that potent drugs should not be dispensed under names which favor forgetting their character. The committee states that only the hypercritical will object to the name of "compound mixture of glycyrrhiza," though that mixture contains a small amount of opium. The name sets a bad example at least; if there is enough opium in the mixture to produce its effect it should be indicated in the name; if the amount is too small to produce any effect it should be omitted from the preparation.

While the question of additions and dismissals from the Pharmacopeia rests primarily on the judgment of physicians, pharmacists are in a position to form an estimate of the attitude of the medical profession as a whole toward specific drugs; hence the committee presents lists of articles to be dismissed or added, and promises more complete lists at a later date. Pharmacists can also aid in determining which of certain commercial varieties of drugs are obtainable and which are not.

The committee takes up the question of increasing the number of assays of organic drugs; Lyons advises against this. It must be apparent to every physician that the time has come when we must introduce physiologic standardization for at least a few drugs, such as ergot, digitalis and strophanthus and their preparations, which are unsuited for chemical assay. Some pharmacists will urge the objection to this that only the larger manufacturing firms are in a position to standardize drugs physiologically and that this measure would compel the pharmacist to depend on these manufacturers. This argument should not be permitted to stand in the way of real progress.

A suggestion which will probably meet much favor at the hands of physicians, who should really have the larger share in deciding the point, is that all tinctures shall be made of uniform percentage strength.

If physicians will manifest as much interest in the forthcoming revision as the pharmacists are doing, and if the various problems concerned in revision be considered broadly, we should have a Pharmacopeia in which pharmacists and physicians may feel a just pride—a work which will command confidence and general respect and which will come to be regarded by all really progressive physicians as the storehouse from which to select agents for their prescriptions. Then shall we see the beginning of the end of the reign of the nostrum evil and the rise of legitimate pharmacy and therapeutics. It remains to be seen how far the selfish interests of certain manufacturers will be permitted to thwart this much-to-be-desired result.

Correspondence

Industrial Section of Congress on Hygiene

To the Editor:—Section IV of the International Congress on Hygiene and Demography, meeting in Washington, Oct. 1, 1910, will deal with industrial and occupational hygiene. This is an almost entirely unexplored field in our country and the coming congress offers for the first time an opportunity for a full discussion of the diseases incident to industry in the United States and the measures of prevention which should be advocated. Many papers dealing with conditions in Europe and England have been promised, and it is hoped that conditions in this country will also be thoroughly discussed. Physicians whose private or hospital practice lies among people of the wage-earning class are reminded that very little original work has been done by Americans in industrial diseases and that statistical studies of the morbidity rate in the different trades would be of great value. Communications regarding such papers should be sent to 1819 Q street, Washington, D. C.

George M. Kober, *President.*
Alice Hamilton, *Secretary.*

Dr. Jacobi Refuses to Endorse Promoter of Unethical Advertising

To the Editor:—I request you to publish this protest of mine against an attempt on the part of William Edward Fitch, M.D., the new editor of *Pediatrics* to use my name as that of a renegade from decent professional behavior. In the first number controlled by him, he places, without my permission or consent, my name at the head of his "Editorial Council," whatever that may mean. His introductory chapter on "Advertising in *Pediatrics*" sneers at those who look on "all advertising as venal muck" that would soil their "pharisaical fingers," and whom he calls "pharisaical pariahs," etc., and invites the "liberal patronage of legitimate advertisers." The editor might have known that I approve of purity and ethics in the medical profession, as represented in such of its magazines as are not mercenary or meretricious, and of its aversion to the advertising of nostrums. I shall thank you for publishing the following copy of a letter I sent to Dr. Fitch, November 19:

> I never read your first number until my attention was called to it by a western correspondent. In using my name as a member of your "Editorial Council" you made a mistake and committed a wrong. I never gave you permission; you never asked for it. In shaping your policy, I am sure you never consulted anybody who cares for the editorial standing and progress of the profession. That policy of yours may be successful from a financial point of view, which I doubt, however; for what you gain in advertisers, you will lose in readers and friends. It is an abomination. Please remove my name from the place it now occupies and have the goodness to tell your readers of your mistake. Yours truly,
>
> A. Jacobi.

November 22, I received the following reply:

> *Dr. Abraham Jacobi, New York City.*
>
> *Dear Doctor:* In reference to our telephone conversation of a few moments ago as stated, I now advise that I interpreted your letter in reply to my letter of September 15, to mean that you were willing to become a collaborator to the new *Pediatrics*. It seems that I have misunderstood the purport of your letter for which I am exceedingly sorry, since you would be the last gentleman in the world that we would care to offend, and we beg to assure you, dear doctor, that no offense, discourtesy, or anything of the kind was intended, and it will be our pleasure in our next issue (December) to make the necessary explanation and remove your name from the place it now occupies.
>
> Regretting the occurrence and imploring your forgiveness the writer begs to remain,
>
> Most sincerely and respectfully yours,
> W. E. Fitch, M.D.,
> Editor of *Pediatrics*.,

I am sorry to say that the courteous tone of this letter does not improve Dr. Fitch's position as a promoter of unethical advertising, nor that of his magazine as a worthy part of medical literature.
A. Jacobi, New York.

Comment:—In the October issue of *Pediatrics* (the first under the new management) it is stated editorially that:

> "No advertisements will appear in the advertising section of *Pediatrics* exploiting any pharmaceutical product, the manufacturers or proprietors of which do not freely and accurately give the exact character and ingredients entering into or forming its component parts."

In the same issue is to be found an advertisement of "enteronol," the nostrum which was exposed in The Journal Nov. 20, 1909. The Enteronol Company, it will be remembered, claims that it does not pay cash for advertising space but takes it "in trade"—either in "our guaranteed 7 per cent. preferred stock" or in enteronol itself. As to how accurately the "exact character and ingredients entering into" enteronol, are given by its manufacturers see the exposure in The Journal. Another editorial statement regarding the advertising standards of *Pediatrics* is:

> "Any advertisement containing dangerous or toxic ingredients will be refused."

This probably means that *products* "containing dangerous or toxic ingredients," etc., will not be advertised. Danger and toxicity are relative terms, but if used absolutely, then it would seem that *Pediatrics* will refuse to advertise most of the valuable drugs in the pharmacopeia; if used relatively then it would seem in order for that publication to drop the advertisement of what Mr. Adams calls "that hoary and dangerous fake. antikamnia," which is sent to the laity direct and which contains a heart depressant both dangerous and toxic.

> "Advertisements presenting extravagant or impossible statements will be refused."

On advertising page xv of the same issue of *Pediatrics* which contains the above excellent sentiments, occurs this statement:

> "Enteronol, the Greatest Gastro-Enteric Antiseptic and Germicide known to Medical Science."

If this is the editor's idea of a non-extravagant and not-impossible statement then his "rules and regulations to which all advertising must conform" will not offer insuperable barriers to the acceptance of peruna, Duffy's malt whisky or any "patent medicine" frauds.

The editor of *Pediatrics* says: "We hold that the advertising pages of every scientific publication is [are?] entitled to a 'square deal.'" It is respectfully suggested that the medical profession and the public are also entitled to a "square deal," and when the frauds and humbugs of the proprietary world are exploited in the pages of a medical publication the medical profession and the public are not getting it.

We do not blame Dr. Jacobi for his evident indignation. It would be interesting to know how many more physicians' names have been thus misused.

Miscellany

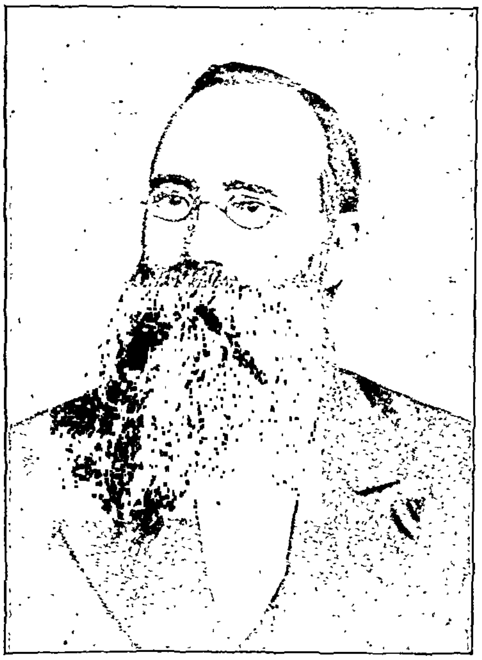
The Quack and the Laity.—Maynard A. Austin (*Indianapolis Medical Journal*, October, 1909) holds that the practitioner of medicine alone is to blame for any lack of standing he may have in his community. This neglect of psychologic principles, he believes, has been the cause of the great success of the religio-medical movements. Considering the personality of the average quack, he must be credited with exhibiting a good front on all occasions and always making occasions for putting up the front. He is egotistic and in his egotism believes himself capable of much that is beyond his ability. Patients are impressed with this sort of thing, and against their own judgment will place themselves in the hands of such men. An interesting fact is the ease with which fees are secured by quacks in advance, while the home doctor waits six months to five years, and feels lucky if he gets his pay then. If a patient pays out a hundred dollars to be cured of some malady, that hundred dollars is going to be a wonderful inducement for that patient to carry out every instruction that is given to him. If he sees his family doctor once a week, and pays him a dollar or two (or has it charged on the books) the patient is little or nothing out. and with the average patient with a chronic affection, the amount of assistance he gives in helping himself get well is a negligible quantity. To do away with all these things Austin regards as an impossibility. So long as people live and suffer, the reputable physician will have to contend with impostors and charlatans. To do away with the worst features of quackery is a matter of education, not condemnation. Few physicians, to say nothing of the laity, know of the various schemes the "patent-medicine" concerns are working to gain the confidence of, and much valuable information from, the women of various cities. Under the pretext of giving health lectures, hygienic demonstrations and physical culture training, a number of women are employed who go out in the various cities with letters of introduction and a good front, approach a few of the prominent club women and get in touch with the church people through the ministers and ministers' wives. One of the peculiar facts of the business is the ease with which the churches are secured for the furtherance of these affairs, and occasionally it has leaked out that the minister has been the recipient of a percentage. This is not to be wondered at in the light that the religious papers have been among the worst offenders in the class of advertising they carried. One church paper, recently inspected by Austin, carried thirteen advertisements offering cures for such conditions as cancer, consumption, fits, rheumatism and other chronic conditions for which no certain cure has ever been discovered. These conditions are brought about not only by the superstition of the laity, but also by their refusal to believe—when told them by their physicians—that some conditions have no certain cure, that others are incurable and that others need nothing but mental treatment because they are purely imaginary. Austin says that even the reputable profession could be given a house-cleaning with great benefit, moral, professional and financial, to the good of the profession itself and the physical and financial welfare of the laity.

Deaths

William Biddle Atkinson, M.D., a member of the American Medical Association since 1859 and its permanent secretary from 1864 to 1899; died at his home in Philadelphia, November 23, aged 77. He was born in Delaware county, Pa., received his preliminary education in Philadelphia, and commenced the study of medicine in 1850 under the preceptorship of Dr. Samuel McClellan, one of the founders of Jefferson Medical College and the Pennsylvania Medical College, Philadelphia; after a three-years' term of study he was graduated from the Jefferson Medical College in 1853. For several years thereafter, in addition to the practice of medicine, he taught mathematics and the classics at Gregory's Classical School.

In 1854 he became a member of the Philadelphia County Society; was its secretary for seven years; a reporter of its proceedings for medical journals, vice-president of the society, and in 1873 its president. He was permanent secretary of the Medical Society of the State of Pennsylvania from 1862 to 1897; secretary and later president of the Northern Medical Association of Philadelphia, and in 1894 was elected president of the State Associated Health Authorities of Pennsylvania.

For several years Dr. Atkinson acted as correspondent of the *New Jersey Medical and Surgical Reporter*, *New York Medical Times*, *Nashville Medical Journal*, *New Orleans Medical Journal* and others; in 1858 he became associate editor of the *New York Medical and Surgical Reporter*, and a year later was appointed editor of the department of obstetrics and diseases of women and children in the *North American Medico-Chirurgical Review*. His literary work also included the editing of the annual volume of transactions of the American Medical Association; the publication of several annual editions of the Philadelphia Medical Directory, a biography of physicians and surgeons of the United States, and many valuable monographs on obstetrics and gynecology.



William Biddle Atkinson, M.D.

He commenced his medical teaching as assistant professor of obstetrics and diseases of women and children in the Pennsylvania Medical College in 1859, retaining this position for two years until the college became defunct, and at this time he conducted the only gynecological clinic in the city; from 1877 to 1886, he was lecturer on diseases of children in Jefferson Medical College, and in 1887 was made professor of sanitary science and pediatrics in the Medico-Chirurgical College.

During the Civil War he served as acting assistant surgeon in the army for two years, and from the creation of the State Board of Health in Pennsylvania in 1886, was medical inspector. In 1861 he was made physician to the department of diseases of children, and president of the staff of Howard Hospital, Philadelphia, and held this position for several years. The American Medical Association owes much to Dr. Atkinson, who, during the years of relative weakness of the organization, served faithfully as its secretary, sparing neither time nor strength for the furtherance of its best interests and its upbuilding.

Frank Bradford Sprague, M.D. University of Vermont, Burlington, 1889; a member of the American Medical Association, New York Academy of Medicine, American Otological Association, American Laryngological, Rhinological and Otological Society; and American Academy of Ophthalmology and Otolaryngology; surgeon to the ear, nose and throat department of Rhode Island Hospital, Providence; and aural surgeon on that staff; well-known as a specialist of diseases of the ear; died at his home in Providence, November 17, from septicemia, due to an operation wound, aged 44.

Frank Merriam Johnson, M.D. Albany (N. Y.) Medical College, 1898; a member of the Medical Society of the State of New York; and health officer of East Nassau, N. Y.; died at his home in that place, November 8, from the effects of a gunshot wound of the thorax, self-inflicted, it is believed, with suicidal intent, while ill and despondent, aged 40.

William J. Purkhiser, M.D. Kentucky School of Medicine, Louisville, 1882; a member of the Indiana State Medical Association, and secretary of the Third Councilor District Medical Society; in 1888 and 1889, senior assistant in the Central Indiana Hospital for the Insane, Indianapolis; local surgeon for the Monon System at Salem, Ind.; died in his office in that place, November 15, from the effects of a gunshot wound of the head, self-inflicted, it is believed, with suicidal intent, while despondent on account of ill health, aged 48.

William H. Finley, M.D. Medical College of Ohio, Cincinnati, 1858; assistant surgeon of the Twelfth Iowa Volunteer Infantry and surgeon of the Eighth Iowa Volunteer Cavalry during the Civil War; a member of the local pension board; coroner and commissioner of Dubuque county, Iowa, and a member of the common council of Cascade; died at his home, November 13, from senile debility, aged 78.

John H. Britts, M.D. Missouri Medical College, St. Louis, 1867; a member of the American Medical Association; surgeon in the Confederate Service during the Civil War; once mayor of Clinton, Mo., and state senator; died at his home in Clinton, November 13, aged 74.

Charles Henry Ott, M.D. Jefferson Medical College, Philadelphia, 1883; a member of the American Medical Association; superintendent and surgeon-in-chief to the Robert Packer Hospital, Sayre, Pa.; local surgeon to the Lehigh Valley Railroad; supreme medical examiner of the Modern Protective Association; died in the Robert Packer Hospital, November 1, from carcinoma of the liver, aged 48.

David Herrick Beckwith, M.D. Eclectic Medical Institute, Cincinnati, 1849; emeritus professor of sanitary science in the Cleveland Homeopathic Medical College; formerly president of the city and state boards of health; consulting physician to the Huron Street Hospital, Cleveland; vice-president of the Cleveland Medical Library Association; died at his home, November 19, aged 84.

Quincy Orlin Sutherland, M.D. Hahnemann Medical College, Chicago, 1873; a member of the Wisconsin State Board of Health, American Public Health Association, and Lake Michigan Sanitary Commission; at one time president of the board of education of Janesville, Wis.; died suddenly at his home, November 16, from angina pectoris, aged 61.

James William Stuart, M.D. Medical School of Maine, Brunswick, 1873; a member of the Maine Medical Association; formerly president of the Oxford County Medical Association; died at his home in Rumford Corner, November 10, from embolism, aged 65.

John Pierre Frishmuth, M.D. University of Pennsylvania, Philadelphia, 1890; of Philadelphia; a member of the American Medical Association; a specialist on diseases of the stomach, and formerly visiting physician to the American Hospital for Diseases of the Stomach; died in the University of Pennsylvania Hospital, Philadelphia, November 20, after two operations for tumor of the brain, aged 41.

Burr K. Ellis, M.D. University of Minnesota, Minneapolis, 1903; formerly of Jackson and Sparta, Minn.; and later of Greeley, Colo.; a member of the Colorado State Medical Society; died in Rock Valley, Iowa, November 4, from tuberculosis, aged 32.

Clifton Mayfield, M.D. George Washington University, Washington, D. C., 1880; a member of the American Medical Association; formerly of Washington, D. C.; died at his home in Canarsie, Long Island, N. Y., November 15, from heart disease, aged 51.

John Patrick Henry, M.D. New York University, New York City, 1886; a member of the American Medical Association, Physicians' Alliance, and Celtic Medical Society; died at his home in New York City, August 31, from neuritis, aged 50.

John Parker Powell, a pioneer practitioner of Oregon; for more than fifty years in practice in Gresham; for many years coroner of Multnomah county; died at his home in Gresham, October 30, from angina pectoris, aged 87.

John H. Seegraves, formerly of Rector, Ark.; assistant surgeon of volunteers during the Civil War; died at the home of his daughter in Mayfield, Ky., October 21, from malaria and acute articular rheumatism, aged 69.

John S. Cornwell, for more than sixty years a practitioner of Carthage, Tenn.; a surgeon in the Confederate Service during the Civil War; died at his home in Watertown, Tenn., July 28, from senile debility, aged 93.

Charles LeGrand Hayes, M.D. Vanderbilt University, Nashville, Tenn., 1877; a member of the Mississippi State Medical Association; died at his home in Byhalia, November 16, from cerebral hemorrhage, aged 50.

R. Augustus Evans, M.D. Western University, London, Ont., 1905; councilor for the town of Sutherland, Sask.; died in the General Hospital, Saskatoon, Sask., November 2, from chronic interstitial nephritis, aged 29.

Jay Judson Thompson, M.D. Chicago Homeopathic Medical College, 1888; professor of surgery in Hering Medical College, Chicago; died at his home in that city, November 22, from cerebral hemorrhage, aged 52.

Nathaniel Williams, M.D. University of Pennsylvania, Philadelphia, 1868; a surgeon in the Confederate Service during the Civil War; died at his home in Hampton, Va., November 18, from heart disease, aged 66.

William J. Chittenden (license, Ill., 1877; license, Colo., 1894); a veteran of the Civil War; died at the home of his daughter near Neodesha, Kan., May 15, from gastrointestinal catarrh, aged 68.

A. L. Holliday (license, Marshall county, Ala.); for more than thirty years a practitioner of Albertville, Ala.; died at the home of his son in Fairview, Birmingham, Ala., November 16, aged 75.

Cortez Nelson, M.D. Long Island College Hospital, Brooklyn, N. Y., 1908; a surgeon on South American steamers; died in Bellevue Hospital, New York City, November 1, from tropical fever, aged 45.

John Washington Shell (license, Iowa, 1895); for more than forty years a practitioner of Iowa; died at his home near Decatur, March 16, from cerebral hemorrhage, aged 85.

Rawdon J. Arnold, M.D. Kansas City (Mo.) Hospital Medical College, 1883; (license, Cal., 1877); of Oakland, Cal.; died in the Alameda County Hospital in April.

John M. Cooper, M.D. Medical College of Ohio, Cincinnati, 1857; of Wellsburg, W. Va.; died at the home of his daughter in Charleston, W. Va., November 17, aged 77.

John Thomas Fleming, M.D. Baltimore (Md.) Medical College, 1904; died at his home in Pascoag, R. I., November 11, from heart disease, aged 35.

Samuel Martin Kelso, M.D. Jefferson Medical College, Philadelphia, 1868; died at his home in Xenia, Ohio, October 17, from heart diease, aged 71.

Rodney F. Crowther, M.D. Baltimore (Md.) Medical College, 1883; died at his home in Earleigh Heights, Md., July 27, from senile debility, aged 84.

Dennis J. McLaughlin, M.D. University of Pennsylvania, Philadelphia, 1880; died at his home in Philadelphia, November 11, aged 52.

Lebbeus Curtis, M.D. Dartmouth Medical School, Hanover, N. H., 1878; died at his home in Hephzibah, Ga., November 16, aged 63.

Nathaniel C. Whitfield, M.D. Hahnemann Medical College, Chicago, 1883; died at his home in Los Angeles, November 7, aged 66.

Marriages

Elisha Flagg, M.D., to Mrs. Hugh Whitney, both of Boston, November 17.

William A. Dorsey, M.D., Seattle, Wash., to Miss Blanche Pentz, at Seattle, November 12.

Carroll Leja Nichols, M.D., to Miss Hazel Louisa Howe, both of Brooklyn, N. Y., November 2.

Robert L. Mitchell, M.D., Baltimore, Md., to Miss Annie Inskip Smith, of Elkton, Md., November 17.

Edwin Dixon Carder, M.D., to Miss Barbara Fraser Maclennan, both of Vancouver, B. C., October 12.

Richard Henry Lawlor, M.D., Methuen, Mass., to Miss Catherine V. Murphy, of Boston, November 18.

John Wilson Somerville, M.D., Norfolk, Va., to Mrs. Louise Gay Stubbs, of Atlanta, Ga., November 17.

Karl Francis Little, M.D., Westwood, Cincinnati, to Miss Dona Tebbs, of West Harrison, Ohio, November 17.

Patrick William O'Brien, M.D., Toronto, Ont., to Miss Helena Margaret Graves, at London, Ont., October 26.

Herman Louis Kretschmer, M.D., to Miss Lucy North Barnett, both of Chicago, at Richmond, Ind., November 17.

Eugene Boykin Elder, M.D., to Miss Margaret Selena Borthwick, both of Macon, Ga., at Toronto, Ont., September 18.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

RUHEMANN'S URICOMETER

To the Editor:—Please answer the following questions regarding the workings of Dr. F. Ruhemann's uricometer. The normal marking on the scale is said to be 0.65; suppose that the reaction is not complete until the instrument is filled to the top, 0.25; then subtracting 0.25 from 0.65 we have 0.40. I take it that 0.40 means so much less than the urine should contain, but I would like to have you show how, with 0.40 to start with one can figure out the amount of uric acid the person is passing in 1,500 c.c. of urine. Kindly take some marking which shows that too much uric acid is being passed and work out the problem of telling the amount of uric acid in 1,500 c.c. of urine. J. L. Tracy, Toledo, Ohio.

Answer.—The principle of Ruhemann's uricometer is that uric acid will absorb iodin. A definite amount of iodin is placed in the instrument in a solution composed of iodin, 1.5; potassium iodid, 1.5; alcohol, 15; water, 185.0. In the very bottom of the instrument is a quantity of carbon disulphid. The carbon disulphid dissolves the iodin with a brown color. The urine is added gradually with shaking after each addition. When all the iodin has been absorbed by the uric acid in the urine, the carbon disulphid will be colorless (one must stop with a faint pink color). The less the proportion of uric acid in the urine, the more urine must be added to decolorize the iodin solution. Consequently the scale is arranged with markings for cubic centimeters on one side and amount of uric acid per thousand of urine on the other. The percentage of uric acid necessarily decreases with the increased amount of urine, so that the scale for amounts of uric acid reads from above downward. If 7.2 c.c. of urine must be added, a percentage of uric acid corresponding to 0.25 per thousand would be indicated. If the patient is passing 1,500 c.c. of urine this would amount to 0.375 gm. of uric acid. Suppose that it required the addition of only 4 c.c. of urine, the corresponding figure in uric acid would be 0.8 per thousand and the amount for 1,500 c.c. would be 1.2 gm. A normal marking on the scale is only an estimate, as what is normal in one case might be abnormal in another and this figure has nothing to do with the calculation except that if 0.65 is marked as the normal, we would calculate from that for 1,500 c.c. the normal quantity of uric acid as 0.975 gm.

The Public Service

Medical Department of the Army

Changes for the week ended Nov. 27, 1909:

Stark, Alexander N., major, granted an extension of 15 days to his leave of absence.

Duncan, William A., capt., granted sick leave of absence for 3 months.

Manly, Clarence J., major, granted leave of absence for 7 days.

Roberts, William M., major, promoted from captain November 17, vice Ewing, retired.

Glennan, James D., and Rafferty, Ogden, majors, ordered to report at Washington, December 17, for examination for promotion.

McAndrew, Patrick H., capt., ordered to report at Washington, D. C., for examination for promotion.

Jordan, Edward H., and Davis, Oscar F., 1st lieuts., M. R. C., relieved from duty in Philippines Division; will sail for San Francisco, Cal., February 15.

Browne, Rhodric W., 1st lieut., M. R. C., ordered from Fort Monroe, Va., to Fort Niagara, N. Y., for temporary duty.

Ellot, Henry W., 1st lieut., M. R. C., granted an extension of 1 month to his leave of absence.

Henning, Oswald F., 1st lieut., M. R. C., ordered to active duty; will proceed to San Francisco, and sail January 5, for Philippine service.

Wells, Francis M., 1st lieut., M. R. C., relieved from duty at Fort Robinson, Neb., and ordered to Fort Apache, Ariz., for duty.

Medical Corps of the Navy

Changes for the week ended Nov. 27, 1909:

Brownell, C. D., surgeon, detached from the *Mississippi* and granted sick leave for 6 weeks.

Clifford, A. B., P. A. surgeon, detached from the Naval Hospital, Las Animas, Colo., and ordered to the *Albany*.

Public Health and Marine-Hospital Service

List of Changes for the seven days ended Nov. 24, 1909:

Irwin, Fairfax, surgeon, relieved from duty on U. S. Revenue Cutter *Thetis*, effective Nov. 22, 1909, and granted 1 month's leave of absence.

Parker, Herman B., P. A. surgeon, relieved from duty at Ellis Island, N. Y., and directed to Guayaquil, Ecuador, for duty in the office of the U. S. Consul.

Anderson, John F., P. A. surgeon, directed to proceed to Mexico City, on special temporary duty.

White, M. J., P. A. surgeon, directed to proceed to Flint, Mich., on special temporary duty.

Lloyd, Bolivar J., P. A. surgeon, on the arrival of Passed Assistant Surgeon Herman B. Parker, directed to proceed to New York, and report by wire to the bureau for further orders.

Lloyd, Bolivar J., P. A. surgeon, granted 1 month's leave of absence en route to United States.

Spratt, R. D., P. A. surgeon, leave of absence for 20 days from Nov. 17, 1909, amended to read from December 10.

Lyon, R. H., asst.-surgeon, granted 7 days' leave of absence from Nov. 14, 1909, under paragraph 191, Service Regulations.

Duke, B. F., acting asst.-surgeon, granted 25 days' leave of absence from Nov. 18, 1909.

Castro-Guitierrez, J. L., acting asst.-surgeon, granted 7 days' leave of absence from Nov. 18, 1909.

Hallett, E. B., acting asst.-surgeon, granted 3 days' leave of absence from Nov. 24, 1909.

Naulty, C. W., Jr., acting asst.-surgeon, granted 5 days' leave of absence from Nov. 24, 1909.

Schuster, B. L., acting asst.-surgeon, granted 3 days' leave of absence from Nov. 25, 1909.

Sinclair, A. N., acting asst.-surgeon, granted 15 days' leave of absence from Dec. 16, 1909.

Ward, J. LaBruce, acting asst.-surgeon, granted 10 days' leave of absence from Nov. 17, 1909.

Wilson, J. G., acting asst.-surgeon, granted 25 days' leave of absence from Dec. 2, 1909.

BOARD CONVENED

Board of medical officers convened to meet at the Marine Hospital, Baltimore, Nov. 29, 1909, for the purpose of conducting a physical examination of four cadets and three cadet-engineers of the U. S. Revenue Cutter Service. Detail for the board: Surgeon W. P. McIntosh, chairman; Passed Assistant Surgeon M. K. Gwyn, recorder.

Health Reports

The following have been reported to the Public Health Service, during the week ended Nov. 26, 1909:

SMALLPOX—UNITED STATES

Alabama: Montgomery, Nov. 6-13, 15 cases.
California: San Francisco, Oct. 30-Nov. 6, 1 case.
Illinois: Chicago, Nov. 6-13, 1 case.
Indiana: Muncie, Nov. 6-13, 2 cases.
Kansas: Kansas City, Nov. 6-13, 1 case.
Louisiana: New Orleans, Nov. 6-13, 2 cases, imported.
New York: Buffalo, Nov. 6-13, 1 case.
West Virginia: Wheeling, Oct. 30-Nov. 6, 1 case.

SMALLPOX—FOREIGN

China: Shanghai, Sept. 25-Oct. 2, 1 case, 1 death.
Ecuador: Guayaquil, Oct. 1-15, 1 case.
India: Bombay, Oct. 5-12, 1 death.
Italy: Naples, Oct. 23-30, 3 cases, 1 death.
Mexico: Monterey, Oct. 24-31, 1 death; Veracruz, Oct. 23-30, 2 deaths.
Russia: Odessa, Oct. 10-17, 4 deaths; Warsaw, Sept. 11-18, 6 deaths.
Spain: Barcelona, Oct. 18-25, 1 death.
Turkey: Constantinople, Oct. 17-24, 1 death.

YELLOW FEVER

Ecuador: Guayaquil, Oct. 1-15, 13 cases, 4 deaths.
Mexico: Merida, Oct. 30-Nov. 6, 1 case, 1 death.

CHOLERA

Germany: Allenstein district, Oct. 23-30, 1 case; Andreischken, 6 cases; Heydekrug district, 6 cases; Labiau, 3 cases; Skirwietell, 5 cases; Skopen, 3 cases.
India: Calcutta, Oct. 2-9, 11 deaths.
Siberia: Vladivostok, Oct. 4-16, 20 cases, 1 death.

PLAGUE

Ecuador: Guayaquil, Oct. 1-15, 56 cases, 16 deaths.
India, general, Oct. 2-9, 5,209 cases, 4,123 deaths; Calcutta, 5 deaths.
Venezuela: Caracas, Nov. 11, 2 cases, 2 deaths.
Zanzibar, Nov. 8. 1 case, 1 death.

Association News

HOTELS FOR ST. LOUIS SESSION

First Announcement Concerning Hotels—Wisdom of Securing Accommodations Early

The Subcommittee on Hotels, of the Committee on Arrangements for the next annual session of the American Medical Association, to be held in St. Louis, June 7-10, 1910, announces arrangements for hotels.

The Southern Hotel, selected as General Headquarters, is in the down-town district, in the center of the hotel district, and about fifteen minutes' car ride from the various section meeting places. Other hotels of the same rank in the down-town district are the Planters, the American, the Maryland, the Jefferson, and the Marquette. Other excellent hostelries down town are the St. James, the Laclede, the Madison, the Terminal, the Moser, the Stratford, and the Bozier, all of which have splendid accommodations.

In the other direction, and in the so-called residence area, are a number of first-class hotels. The Buckingham, the Buckingham Annex, the Washington, and the Hamilton are from ten to fifteen minutes' ride distant, while the Beers and the West End are in the immediate locality of the section meeting halls. All the hotels mentioned have from 200 to 400 rooms.

Mr. Lyman Hay, president of the Hotel Managers' Association has notified the committee that the regular rates will prevail, and has expressed the earnest desire of the hotel men to have all well satisfied.

The Coliseum, at which will be the Registration Bureau, the Scientific Exhibit, and the Commercial Exhibit, is half way from the down-town district to the group of Section meeting places.

As the crowds which attend a session of the American Medical Association usually tax the hotel capacity of the city in which the session is held, the committee is preparing a list of other and smaller hotels, as well as a splendid list of boarding houses and private homes, in order to care for the overflow.

Many reservations are already made and the hotels are prepared for all applications. The Committee on Hotels requests early application to these hotels from any who are particular about their accommodations. For example, a group from one community may desire adjoining reservations; two or more persons may desire rooms *en suite*, with bath adjoining, one may have a preference for some particular hotel. These and other arrangements are possible now, but may be difficult or impossible to obtain later, when all the best rooms and even all available accommodations in some hotels will be engaged.

Applications should be sent direct to the hotel and the hotel management will make the arrangements desired; but the Committee on Hotels will gladly render aid at any time, to have all satisfactorily located. Dr. Louis H. Behrens, Chairman of the Committee on Hotels, may be addressed at Times Bldg., St. Louis.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Newspapers Interested in Public Instruction

One of the most gratifying indications of awakening interest in the enlightenment of the public on medical and sanitary questions is the interest shown by some of our leading newspapers on this subject. Reference has previously been made in these columns to the New Orleans *Item* (The Jour-

NAL, July 31, 1909, liii, 399). In its issue of November 10, the *Item* says editorially, in part, in discussing the duty of the doctor as a public teacher:

"The medical man either takes it for granted that the world knows that he knows or he fears that a little knowledge placed in the hands of the multitude will prove a dangerous thing. He overlooks the great agencies for the spread of correct information among the people; he operates as an individual or in his local society or hospital and forgets that he is forgotten in turn by the world at large until he is called to attend a case of sickness. In many cases he is called when it is already too late to effect a cure. Every physician who is earnest and capable and who cherishes the ideals of the splendid profession which he practices, knows that medicine is still in its infancy. . . . He feels that the day will come when society will employ the scientific physician as it now employs its public school-teachers, its governors and mayors, its legislators, its judges, and its police force. He knows that just as science has improved on the breeding of apples and oranges, of wheat and corn and sugar-cane, of horses and cattle and other animals, it will improve on the breeding and education of human beings. . . . We need an institute which will send out lecturers to spread a knowledge of hygiene among the children in the schools and among residents in the villages and country districts . . . that will collect and utilize every agency for the spread of a correct knowledge of preventable diseases. . . . The physician no more belongs to himself or to his class than does the preacher of the gospel, the teacher in the school, the publisher of a newspaper, the judge in the courts, or the advocate at the bar. As a professional man, it is his duty to serve humanity, to ask or demand the cooperation of other workers for the eliminations of wrong and the advancement of right in the service of humanity."

Equally gratifying is an editorial in the St. Louis *Republic* for November 17, called forth by letters to the editor from several antivaccinationists who advanced the stock arguments and time-worn statistics which have so often done duty on this subject. The *Republic* prints these letters in its correspondence columns and comments as follows editorially: "To defend vaccination gives a modern newspaper a queer sort of feeling. It is like defending the theory of the circulation of the blood or arguing with Rip Van Winkle, but it is still necessary, as two letters printed elsewhere on this page attest." The *Republic* then discussed the letters in question in a way that cannot fail to be enlightening and convincing to its readers.

The value of such comments lies in the fact that, coming from a layman and not a medical man, there can be in them no suspicion of personal interest such as is often injected into such discussions. When a newspaper like the St. Louis *Republic*, of its own initiative, defends and champions the cause of scientific medicine so convincingly and satisfactorily, it is certainly safe to assume that general public opinion is equally ready to support and to further sanitary reforms whenever the people are properly instructed.

Hogs Versus Children

The *Bulletin of the Iowa State Board of Health* recently contained the following item which graphically sets forth the apparent relative importance of children and hogs if one is to judge from the government appropriations made for their safety:

"Congress has been asked this year for an appropriation of $3,000 for the employment of an expert in the welfare of children. It was hoped by those who made the request that this modest beginning would lead to an efficient bureau of the Department of the Interior which would eventually deal with a wide range of questions affecting school children.

"In support of this request a Nebraska woman wrote that her husband was engaged in raising hogs while she was trying to raise a boy. Her husband, she said, had no difficulty in getting efficient and expensive aid from the government in his hog-raising pursuits, but she had to struggle along in her own way with the boy question. With a pardonable mother's prejudice, she argued that the welfare of her boy seemed almost as important as the health and happiness of her husband's hogs."

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Fourth Month—Second Weekly Meeting

CHRONIC ENDOCERVICITIS

PATHOLOGY: 1. Erosion of cervical epithelium, (a) simple, (b) papillary or granular erosion. 2. Glandular enlargement, (a) polypoid (mucous polypi), (b) cystic (follicular) glandular enlargement.

DIAGNOSIS AND PROGNOSIS.

TREATMENT: Indications for local treatment, for repair of laceration, for amputation of cervix.

CHRONIC ENDOMETRITIS

CLASSIFICATION: A. Histological: 1. Glandular, (a) hypertrophic, (b) hyperplastic. 2. Interstitial. 3. Glandular and interstitial. Cystic and polypoid endometritis. B. Clinical: 1. Post-abortum. 2. Exfoliative. 3. Senile. 4. Bacterial (tubercular, gonorrheal, typhoid, etc.). 5. Decidual.

SYMPTOMS: Menstrual disturbances, hemorrhages, discharge, abortions or sterility, pain, vesical and rectal disturbances, systemic and reflex disorders.

TREATMENT: Systemic, local, surgical.

CHRONIC METRITIS

PATHOLOGY: Chronic changes in endometrium; in peritoneum; in muscularis, 1. hypertrophic, (a) puerperal (subinvolution), (b) nonpuerperal (elongation of cervix); 2. interstitial, cirrhotic, metritis (puerperal and non-puerperal atrophy).

SYMPTOMS AND DIAGNOSIS.

PELVIC INFLAMMATION

Includes metritis, lymphangitis, phlebitis, cellulitis, salpingitis, ovaritis and pelvic peritonitis.

ROUTES OF INFECTION: Extension by (a) continuity of uterine and tubal mucosa, (b) through lymph and blood vessels, (c) extension from extrapelvic organs, appendicitis, tubercular peritonitis, etc.

ETIOLOGY: Secondary to endometritis, traumatisms of parturition and surgery, vaginal, vesical, intestinal and peritoneal infections, acute infectious diseases. Micro-organisms present, relation of different organisms to extent and character of pathology.

Society Proceedings

COMING MEETINGS

American Physiological Society. Washington, D. C., December 28-30.
Medical Society of State of New York, Albany, January 25.
Southern Surg. & Gynecological Assn., Hot Springs, Va., Dec. 20-21.
Western Surgical and Gynecological Assn., Omaha, December 20-21.

CITY OF WASHINGTON BRANCH OF THE AMERICAN PHARMACEUTICAL ASSOCIATION

Meeting held November 3, 1909

DR. H. W. WILEY, Chief of the Bureau of Chemistry, in the Chair

Patent and Trade-Mark Laws

The audience included pharmacists, physicians, manufacturers and representatives of at least several government services, including the Patent Office and the Bureau of Chemistry.

DR. MURRAY GALT MOTTER, Washington, discussed the report of the Committee on Patents and Trade-Marks of the American Medical Association (THE JOURNAL A. M. A., June 19, 1909, p. 2063), and pointed out that this report presented the several questions in a clear and concise manner.

DR. F. E. STEWART, Philadelphia, a member of the Committee on Patents and Trade-Marks of the *American Pharmaceutical Association*, discussed the report of his committee.

MR. SAMUEL L. HILTON, Chairman of the *Committee* on National and State Legislation of the American Pharmaceutical Association, reported on the hearings on the Mann bill and outlined the history of that bill. He pointed out the shortcomings of that particular measure and the possibility of overcoming them by modifications.

Mr. Willard S. Richardson, Chairman of the Committee on National Legislation of the N. A. R. D. reported on the hearings that have been held on the Currier bill. He said in part: The purpose of this bill was to bring about a more equitable exchange of patent rights between this country and foreign countries. At present, a citizen of a foreign country receives more protection by a patent in this country than is given in a foreign country to an American citizen. This humiliating condition is generally unknown to the majority of American citizens. The only objection that has ever been urged against the reciprocal principle of the Currier bill is that the adoption of this principle would be in opposition to Article 2 of the International Agreement of 1883. Since that agreement, a number of foreign countries have introduced serious and unjust restrictions, to the detriment of American citizens. At the Brussels Conference, in 1887, our delegates endeavored to secure a modification of Article 2. While we lost in our contention no criticism was ever attempted on the stand taken by us. President Roosevelt, in his message in 1903, said: In granting patents to foreigners, the proper course for this country to follow is to give the same advantages to foreigners that the country in which these foreigners live extends in return to our citizens. Even the attorneys who have been opposing any change in the present patent laws have not denied the justice of the principle embodied in the Currier bill, and all their efforts have been centered on delaying action of any kind by prolonging the hearings and begging for delay on the ground that the matter should not be gone over hastily.

Dr. Worth Hale, of the Public Health and Marine-Hospital Service, pointed out that, in speaking of the misuse of drugs as fostered by our patent and trade-mark laws, one should disregard personal and financial considerations, since the whole question rests ultimately on such factors as will bring the greatest degree of health to those who suffer from disease. The patient's right and his protection are first to be considered; the interest of manufacturers, of physicians and of pharmacists are but secondary and are to be considered only after the welfare of the general public has been safeguarded. In whatever degree patent and trade-mark laws have lessened this protection they are to be criticized adversely.

Because of laws giving to manufacturers exclusive rights to names and products, the pharmacies of every city and village in the United States are filled with inferior, useless and harmful medicinal substances, and pharmacies frequently have in stock, because of special nomenclature, five, ten, possibly twenty, duplications of the same chemical substance or pharmaceutical mixture. A well-known instance of this abuse is evidenced by hexamethylenamin, the duplication of which has become a necessity in order to meet the demand of the physician who orders it under a trade name, because he is ignorant of its true composition.

We must remember, however, that the abuses which exist have not developed because of the existence of patent and trade-mark laws, but because of the advantages taken of the privileges accorded by them. It must be admitted that patent and trade-mark laws permit of the establishment of monopolies, a monopoly fosters unusual profits, unusual profit permits of extensive advertising, extensive advertising increases the sale, and consequently the use or abuse, thus making the financial returns from the protected product both certain and large. It is unfortunate, indeed, that in no other field are extravagant misleading and unverified claims so difficult to correct or control as in connection with medicinal products, whether advertised to the medical profession or to the laity; whether the remedy be peruna or purgen, dysmenorrhets or desiccated castor oil, its successful sale depends far more on the advertising claims made for it than on absolute or comparative value over older preparations. The advertising pages of even the better class of medical journals are filled with statements that are designed to mislead, are always exaggerated, and not infrequently positively untrue. Just a few instances taken at random:

"Syrup Roborans, as a nerve stimulant and restorative in wasting and debilitating diseases, as a constructive agent in insomnia, pneumonia, tuberculosis, bronchial asthma, marasmus, strumous diseases and general debility this compound has no equal."

"Tongaline, successfully prescribed for twenty-five years. Rheumatism, neuralgia, sciatica, lumbago, malaria, grippe, colds, gout, excess of uric acid. Relieves pain, allays fever, eliminates poison, stimulates recuperation."

"Verily it hath become too easy to live."

The shame of it is that such statements are believed and that they are believed is evidenced by the fact that they must bring returns or they would not be made. No arraignment of modern advertising methods and of the physician who has been influenced by them can be too severe, for the commercial spirit thus generated has robbed medicine of its best heritage, a materia medica based on scientific principles, and has left in its place, at least with the physicians affected, a materia medica of monopolized preparations prescribed by "Docs" educated by detail men and the "patent-medicine" literature of the manufacturer.

Prof. John Uri Lloyd, Cincinnati, pointed out that he necessarily differed from many of his friends on some of the questions that had been under discussion, and asserted that we must individually live up to what we consider to be right and just. He discussed the application and the possible uses of copyrights, trade-marks and patents and expressed himself as being opposed to the granting of product patents because this practice tends to prevent the development of science and is therefore unfair and unjust. He controverted some of the arguments that had been used in connection with the opposition to the Mann bill, and expressed himself as being hopeful of the enactment of more equitable patent laws in the near future. He also expressed himself as having an abiding faith in the pharmacy of the future and in the development of the sciences of pharmacognosy and pharmacology. He also has hope in the materia medica of the future, and expects to witness the elimination of heroic drugs from which so many people at the present time do not escape.

Dr. H. W. Wiley pointed out some of the abuses that had been exposed by the work of the Council on Pharmacy and Chemistry of the American Medical Association, and asserted that the duplication of names for the same, or practically the same, substance constitutes an abuse of far-reaching influence. He pointed out that medical men are gradually recognizing the fallacy of expecting to secure what might be termed mass effect by the use of complex mixtures, and that the trend at the present time is to prescribe simple medicaments for the purpose of securing definite effects.

Mr. M. I. Wilbert pointed out that the reference made by Professor Lloyd to the use of "heroic drugs from which so many of our people do not escape," was particularly applicable to the widespread use, or more correctly, abuse of the so-called synthetic preparations. He expressed himself as fearful that when the history of the tar barrel was finally written, as it eventually will be, the harm done by these remedies, the lives that have been materially shortened and the constitutions that have been undermined, will far outweigh any real good that has been evidenced up to the present time.

Mr. Wymond H. Bradbury called attention to some of the petty frauds that have been developed in connection with patents on medicinal products and referred at some length to the practice of the American agents for some of the products on which patents have expired, who, as is well known, are asking a much higher price for phenacetin, sulphonal and trional, as such, than for the corresponding substances sold by them under the official titles, though there is no detectable difference in the quality of the article, and there is every reason to believe that the agents themselves import these substances under their official titles and pay the minimum import duty.

The continued proprietorship in the name of a patented article, after the expiration of the patent, was further discussed by Dr. Stewart, Dr. Seaman and Mr. Hilton, the latter expressing the belief that the quibble over the property right in the name of a patented medicinal article had never arisen until in connection with phenacetin, sulphonal and trional.

Book Notices

NAVAL HYGIENE. By James Duncan Gatewood, M.D., Instructor in Naval Hygiene, United States Naval Medical School, Washington. Cloth. Pp. 779, with 113 illustrations, 8 colored. Price, $6 net. Philadelphia: P. Blakiston's Son & Co., 1909.

Surgeon Gatewood, from his long experience in the navy and in this especial line, is well fitted to prepare a text-book on naval hygiene. He first takes up naval vital statistics, which he considers the basis of the navy's hygiene, and the air within and without the ship, and in these includes the diseases of seafaring people, which are largely due to lack of proper adjustment between the spaces in the ship and the air and water. The author then considers the matter of light without and within the ship, including illumination, absorption, and reflection of light, the color of clothing in the tropics, etc.; the ship's water and drainage; the hardness of water and its reduction; lavatory arrangements on ships; the storage of water; water distillation, analysis of water; purification of water; camps and camp sites. The chapter on the food of the navy is especially well illustrated with colored plates, showing the natural appearance of healthy beef. A number of illustrations of various edible fish, which take up considerable space, are inserted for some incomprehensible reason. In this chapter is taken up the matter of the proper balance of ration, its determination or analysis, the ideal diet in the tropics, and the care of foods. The navy's clothing, the question of clothing in relation to the body temperature is next discussed; education of the skin, chemical regulation of temperature; conductivity of clothing materials; the respective benefits of wool, linen and cotton; the value of dry clothing; night clothes, uniforms, the care of clothing, etc. Disinfection of the ship is naturally a very important question, and is well and fully considered. The vital causes of disease are detailed; disinfection, isolation to prevent lines of travel; value of disinfectants, and the various communicable diseases expected to be met with on shipboard. Dr. Gatewood also discusses insecticides and the various disinfectants. An entire chapter is devoted to naval recruiting. This deals with the method of making examinations of recruits; the requirements for success in selecting recruits; the object of medical examination in recruitment, and the standardization of the recruit and of the examiner.

MYELOISCHE METAPLASIE UND FÖTALE BLUTBILDUNG UND DEREN HISTOGENESE. Von Dr. med. Heinrich Fischer, Sanatorium "Untere Waid" bei St. Gallen (Schweiz). Paper. Pp. 140. Price, 4 marks. Berlin: Verlag von Julius Springer, 1909.

The facilities which German investigators have for putting out their more extensive publications in the form of monographs is a source of envy to their American colleagues. Technical and medical journals can not afford to turn over the necessary amount of space for this sort of article, while to attempt to publish independently would be almost inevitably ruinous. In Germany, however, it seems to be possible to float almost any publication, however technical, provided it has merit. Fischer's monograph of 140 pages is one of this class.

In certain conditions we find that organs among whose functions we do not ordinarily consider formation of leucocytes and erythrocytes have taken on this function in circumscribed cellular areas which spring up in various places. This "myeloid metaplasia" we associate especially with leukemia, the finding of so-called lymphoid nodules in the liver and elsewhere being a familiar observation. As Fischer shows, however, this peculiar sort of atavism of tissues, whereby they revert to their fetal character of blood-forming organs, is observed to greater or less degree in sundry conditions besides the typical blood diseases. This myeloid metaplasia was ascribed by Neumann and Ehrlich to a metastasis of cells from the bone-marrow, since this was recognized as the only place in which such blood-forming cells were normally present, a view which has long remained prevalent because of the authority of Ehrlich. Other investigators have, however, brought forward evidence that the myeloid cells were not necessarily metastatic but might be present in many tissues as the result of metaplasia of the fixed tissue cells, and M. B. Schmidt in particular demonstrated that the endothelial cells of the liver may manufacture both white and red corpuscles.

Fischer reviews systematically and effectively the facts and theories that bear on both the normal and pathologic formation of blood cells, and then recounts his own observations. These lead him to the conclusion that the view that foci of hematogenic activity in the tissues do not arise through metastasis of marrow cells, but by metaplasia of connective tissue cells especially, and possibly also from endothelial cells. Many interesting observations are recorded concerning other than this main problem, and the pamphlet is of considerable value to hematologists and pathologists.

WALSH'S PHYSICIANS' COMBINED CALL-BOOK AND TABLET. Flexible leather, with flap and pocket. Price, $1.50. Washington, D. C.: Ralph Walsh, M.D., 1804 H Street, N. W.

The usual physicians' visiting list has been modified by Walsh so that it may also be used as a ledger. It contains much useful information; a very concise clinical table of the eruptive fevers, a table showing the changes in strength of important tinctures made official by the last U. S. Pharmacopeia; a complete dose-table for adults; poisons and their antidotes; diet list; the use of the thermometer; facts about infants, etc. The book is of the usual size and is arranged for a monthly record. Pages for memorandum, addresses, obstetric records, and a cash account, are included.

A TEXT-BOOK OF PHYSIOLOGIC CHEMISTRY. By John H. Long. M.S., Sc.D., Professor of Chemistry in Northwestern University Medical School, Chicago. Second Edition. Cloth. Pp. 396, with 42 illustrations. Price, $2.50 net. Philadelphia: P. Blakiston's Son and Co., 1909.

The second edition of this text-book presents some important changes, including the new protein classification adopted by the American societies and a much fuller discussion of the subject of the urine with a new chapter on the methods of urine analysis. The book gives a very clear statement of the chemical facts which should be required in medical schools, while omitting the details which are of interest only to specialists. Long appreciates the danger of presenting more to the student than the student has time to master properly, and a careful examination of the work shows that this danger has been successfully avoided. This new edition will be welcomed both by teachers and students.

THE BLOOD IN HEALTH AND DISEASE. By R. J. M. Buchanan, M.D., F.R.C.P., Professor of Forensic Medicine in the University of Liverpool. Cloth. Pp. 318, with illustrations. Price, $4.50. New York: Oxford University Press, 1909.

This book is evidently prepared to meet the requirements of medical students, but it is, like so many other text-books, not flattering to the ideals of this class of humanity. It is a perfectly good synopsis of the subject of hematology, but there is nothing about it to interest or stimulate the average student, and it will not satisfy the better type of student who wishes to know something of the evidence before he accepts conclusions. Such a book—and there are many not so good as this one—may have a certain field of usefulness and satisfy the demands and desires of many students, but instructors with progressive ideas as to medical education do not exult at their publication. This particular hematology is at its best in the discussion of the changes in the blood in the diseases studied most commonly by the routine methods of the clinical laboratory; with other conditions Dr. Buchanan seems less familiar, and much of recent progress in medical science is disregarded and superseded views are quoted as if established facts. For example, the occurrence of the pneumococcus in the blood in pneumonia is referred to as if occasional, and of grave prognostic import; although it has been abundantly shown, especially by Rosenow, that pneumococcemia is practically constant in pneumonia, J. H. Wright's observations on the origin of the blood platelets are not mentioned, and many similar omissions might be recorded. The book is embellished with many excellent reproductions of careful colored drawings of blood preparations made by Dr. Buchanan, and in general, the publisher's part of the work is exceptionally well done.

Neurasthenia. By Gilbert Ballet, Professor *agrégé* at the College of Medicine of Paris. Translated from the Third French Edition by P. Campbell Smith, M.D. Cloth. Pp. 408, with 7 illustrations. Price, $2 net. New York: Paul B. Hoeber, 1909.

Precisely at this time, while the epidemic of psychotherapeutic "afflictions" is still raging in and out of the profession, Professor Ballet's book on neurasthenia is opportune. Primarily designed as a monograph on treatment, the present (third) edition, of which this is an excellent translation, has expanded so as to include etiology and symptomatology. To those who received their first psychotherapeutic repast out of Dubois' milk-bottle, this book may seem more difficult of digestion, but in the end it will be found more invigorating and real food for men. The volume is replete with good advice and will be profitable alike to specialist and general practitioner.

Though the bulk of the book is devoted to treatment, yet the preliminary short chapters on etiology, symptomatology and classification deserve commendation, as they are clear and conform to the accepted views of neurologists both here and abroad. Unlike Dubois' book, which is a combination of metaphysics, pseudopsychology and psychotherapy, it gives facts and does not confuse the reader by placing hysteria, neurasthenia, psychasthenia, hypochondriasis and every other classified and unclassified nervous trifle under the all-comprehensive head of neurosis and treating them all as one disease. Ballet distinguishes two great types of neurasthenia, (1) the so-called neurasthenia minor, found in childhood and manifesting itself by congenital tendencies to physical weakness and mental insufficiencies, and (2) the fully developed neurasthenia of adults, characterized by exhaustion and irritability, which variety he calls neurasthenia major. This classification is similar to that of Dercum, who calls the form which correspond to Ballet's "neurasthenia minor," "neurasthenoid," that is a condition like neurasthenia, but really belonging to various other psychoses or degenerative neuroses, while Ballet's "neurasthenia major" he considers true neurasthenia and treats it very much as Ballet does—as a physical, not a mental affection.

The chapters on treatment are good. Due credit is given to psychotherapy, but the greatest emphasis is put on the treatment of physical conditions, which we believe proper. In a similar sense Oppenheim has recently answered Dubois in a German publication. Neurasthenia is treated not only by suggestion and persuasion for any existing psychic symptoms which may have developed on the physical disorder, but also by means of electricity, massage, hydrotherapy, the rest-cure, dietetic and climatic treatment, and, last of all, by means of drugs to combat certain visceral symptoms. Ballet is no fanatic and does not offer a panacea for all forms of neurasthenia. Among the many excellent chapters the one on diet, which treats of the various digestive disturbances of neurasthenics, is one of the best and well worth careful study. The book is written in an easy style and adapted to the practitioner's needs.

Diseases of the Bones and Joints. By Joel E. Goldthwait, M.D., Charles F. Painter, M.D., Robert B. Osgood, M.D. Cloth. Pp. 685, with illustrations. Price, $6. Boston: D. C. Heath & Co., 1909.

The authors of this book have not attempted to write on orthopedic surgery, but have developed and amplified a number of papers previously published into this very considerable volume of clinical studies. It seemed best to them to include only those diseases which are most common, and to endeavor to give a concise statement of such matters pertaining to etiology, diagnosis and treatment as they have found helpful and satisfying to the patient and suggestive to the physician.

The book is divided into three sections. The first, entitled "Tuberculosis of the Bones and Joints," really comprises only tuberculosis of the joints and so much of the bone ends as are practically always involved in joint tuberculosis and pass ordinarily under the name of joint tuberculosis.

The second section, "Non-Tuberculous Diseases of the Joints," will be found to be the most interesting part of the book. It comprises infectious arthritis, atrophic arthritis, hypertrophic arthritis, lipomata, neoplasms and their relation to joint surgery, hysteric and functional joints, and the operative technic and mechanical treatment of chronic non-tuberculous joint disease. No one in this country has had such abundant material or has given the subject such thorough and conscientious a study as have the authors. Each year we are all seeing more and more of these cases, and learning to differentiate them from tuberculosis, with which not long ago they were generally confounded. No longer are we justified in passing these cases from one to another as hopeless cases for which nothing useful can be done. We know now that it is our duty to look earnestly for the cause, and finding it to remove it. If we do this the progress of the disease is stayed, and local treatment will be of use and some improvement may be confidently expected. This second section alone is sufficient warrant for the purchase of the volume by any general practitioner.

The third section comprises the other subjects in which the authors have been specially interested, from syphilitic bones and joints, osteomyelitis and rachitis on the one hand to flatfoot, aneurism, round shoulders and the use of plaster of Paris on the other hand, not by any means omitting the pelvic articulations and flexed scapulæ. As a treatise on diseases of the bones and joints the book is disappointing; as a series of clinical studies by earnest students and careful observers in the field of orthopedic surgery, it is most valuable and satisfying.

Walsh's Physicians' Handy Ledger. A Companion to Walsh's Physicians' Combined Call-Book and Tablet. Half Leather. Pp. 600. Price, $3.50. Washington, D. C.: Ralph Walsh, 1804 H Street, N. W.

This book is intended as a companion to Walsh's Physicians' Combined Call-Book and Tablet. It is of a very convenient size, 7 by 10, containing 600 pages, 1 page for each patient. This record would appear to be particularly useful by reason of the fact that it not only contains in a very small space, the amount due the doctor, but shows when service was rendered, and how. The book is well bound, opening up easily at any page, and also contains an index.

Protozoology. By Gary N. Calkins, Ph.D., Professor of Protozoology in Columbia University, New York. Cloth. Pp., 341, with 129 illustrations, 4 colored. Price, $3.25 net. Philadelphia: Lea and Febiger, 1909.

This book gives a comprehensive and authoritative presentation of modern protozoology. While protozoa are considered primarily from the biologic point of view, physicians can be fully assured that the pathogenic protozoa are not at all neglected. Professor Calkins has wisely chosen to base the book on broad biologic principles, knowledge of which is essential for the successful application of protozoologic facts to medical problems. The general organization and the physiology of protozoa; the protoplasmic age of protozoa; conjugation, maturation and fertilization of protozoa, are clearly and adequately discussed in the first part of the book, after which come chapters on parasitism (including a discussion of protozoa and the cancer problem, in which no radical views are championed); on the pathogenic flagellates, on the pathogenic hemosporidia, and on the pathogenic rhisopoda. There is a good bibliography, an author's and general index. The need that has existed for a book of this kind is well satisfied by Professor Calkins' work, which admirably fulfils all reasonable demands from the medical point of view.

The Physician's Visiting List for 1910. Flexible Leather, with Pocket and Flap. Price, $1.00 net. Philadelphia: P. Blakiston's Son & Co.

A welcome annual visitor—one of the best of its kind. Neat, handy and compact.

A Manual of Laboratory Methods. By E. M. Perdue, A.M., M.D., Professor of Histology, Bacteriology and Clinical Diagnosis in Hahnemann Medical College, Kansas City, Mo. Cloth. Pp. 188, with illustrations. Price, $1.50. Kansas City: Burton Pub. Co., 1909.

This little book is intended for use by students as a laboratory guide and is in no sense a text-book. It gives in semitabular form directions for embedding and staining tissues, for making cultures of and for staining bacteria, for examination of gastric contents and other body fluids and secretions, for examination of water, etc. An appendix contains tables of weights and measures, lists of Gram-positive and Gram-negative bacteria, stains and reagents, normal and decinormal solutions, etc.

PRACTICAL DIETETICS, with Special Reference to Diet in Diseases. By W. Gilman Thompson, M.D., Professor in the Cornell University Medical College. Fourth Edition. Cloth. Pp. 928, with illustrations. Price, $5. New York: D. Appleton and Company, 1909.

The wide relations of dietetics impose an enormous task on the author who attempts to present the subject in all its relations in an up-to-date manner. The rapid advance of knowledge in all directions renders frequent revision of such a work necessary. Dr. Thompson's work aims to present a practical exposition of the dietetic treatment of all diseases which can be specially influenced by food. To do this and to meet the needs of the general practitioner growing out of the advance of dietetic science, the entire work has been rewritten and considerable additions made. That the result is an eminently practical and useful work is evident. The great value of the scientific data is admitted, but these facts need to be supplemented and interpreted by clinical experience. Calorimetric calculations and metabolism experiments are very interesting, but their application to the individual, and especially to the patient, is not always easy. Thompson is not inclined to accept the lower standard for proteins recommended by Chittenden and Fisher, or to sanction entirely the adoption of Fletcherism. He does not always commit himself on disputed questions.

The diagnosis of diseases of the stomach by laboratory methods is touched on, but in a rather unsatisfactory way. It is hard to see how this matter is properly included within the scope of the book, which does not give other diagnostic methods, but if such subjects are to be discussed it seems hardly worth while to give space to utterly unreliable methods like salol test for motor power and the potassium iodid test for absorptive power. In many other places it is evident that the newer researches on the stomach and intestines have not been fully utilized in revising the work.

In spite of the few defects which may be found on critical study, we have to thank Dr. Thompson for a volume that will in general prove a valuable guide to the physician in a field in which instruction is greatly needed.

A SELECTION OF CASES ON MALPRACTICE OF PHYSICIANS, SURGEONS AND DENTISTS. By Martin J. Wade, Professor of Medical Jurisprudence in the College of Medicine, and Lecturer in the College of Law, State University of Iowa. Cloth. Pp. 896. Price, $4.75. St. Louis: Medico-Legal Publishing Co., 1909.

The great value of this volume and the amount of work expended in compiling it may be surmised from the statement made in the preface that "this volume contains practically every (malpractice) case of any importance which has been decided in the courts of last resort in this country and also the leading cases in England."

The cases are arranged in chronological order, the first one occurring in 1767, the last one in July, 1908. The decisions are all given in full so that all the points in connection with any case are clearly set forth. As a rule, to which there are few exceptions, physicians know far too little of the obligations placed on them in the care of the sick. The question whether all of these obligations are just or not is not to be discussed here; but that they exist is very forcibly shown by the discussions handed down by the learned judges in the cases detailed in this volume. It therefore behooves every physician for his own protection to familiarize himself with the facts as they exist, for in no other vocation is one so liable, at a time least expected and under circumstances least deserved, to be mulcted out of the savings of years of hard work, as in that of the practice of medicine. This work, therefore, should be carefully read by every physician, be he surgeon, internist or specialist, until he is thoroughly informed of the legal duties and obligations assumed in the care and treatment of the sick.

THE MEDICAL RECORD VISITING LIST OR PHYSICIANS' DIARY FOR 1910. Flexible Leather, with flap and pocket. Price, $1.50. New York: William Wood & Co.

Compact and concise as ever, the annual edition of this memorandum book will be welcomed by many who have come to depend on it for the pocket keeping of accounts. The data in the front part have been changed somewhat.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CALIFORNIA: Los Angeles, December 7. Sec., Dr. Charles L. Tisdale, Butler Bldg., San Francisco.
DELAWARE: Regular, Dover, December 14; Homeopathic, Wilmington, December 14. Secretary of the Medical Council, Dr. H. W. Briggs, Wilmington.
IOWA: State House, Des Moines, Dec. 7-9. Sec., Dr. L. A. Thomas.
KENTUCKY: The Armory, Louisville, December 14. Sec., Dr. J. N. McCormack, Bowling Green.
MARYLAND: 1211 Cathedral St., Baltimore, December 14-17. Sec., Dr. J. M. Scott, Hagerstown.
PENNSYLVANIA: Regular and Homeopathic, Philadelphia, December 14-17; Eclectic, Harrisburg, December 14-17. Secretary of the Medical Council, Nathan C. Schaeffer, Harrisburg.
VIRGINIA: Lynchburg, Dec. 14.17. Sec., Dr. R. S. Martin, Stuart.

Florida May Report

Dr. J. D. Fernandez, secretary of the Regular Board of Medical Examiners of the State of Florida, reports the written examination held at Tallahassee, May 19-20, 1909. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 45, of whom 40 passed and 5 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
University of Alabama (1908) 82, 83;	(1909)	91
Atlanta Coll. of Phys. and Surg. (1907) 82;	(1909)	87
Medical College of Georgia (1907) 77;	(1908)	86
Atlanta School of Med. (1908) 80, 83, 87, 96;	(1909) 82,	83, 84, 88, 89, 90.
Hospital College of Medicine, Louisville	(1904)	75
Tulane University of Louisiana	(1908)	89
College of Physicians and Surgeons, Baltimore	(1887)	84
Barnes Medical College	(1895)	83
Marion Sims College of Medicine, St. Louis	(1892)	79
Mississippi Medical College	(1909)	78
Lincoln Medical College	(1897)	76
New York University Medical College	(1896)	91
Leonard Medical School (1908) 80;	(1909) 76,	94.
North Carolina Medical College (1908) 92;	(1909) 82, 84,	87
Medical College of Ohio (1895) 84;	(1904)	82
Starling Medical College	(1888)	94
Medical College of the State of South Carolina	(1909)	84
University of Nashville	(1905)	91
Meharry Medical College	(1899)	75
Gate City Medical College	(1908)	82
University of Havana, Cuba	(1909)	77
FAILED		
Barnes Medical College	(1872)	60
Meharry Medical College	(1908) 62,	66
Gate City Medical College	(1908)	62

The college and year of graduation of one candidate who failed was not recorded.

Missouri September Report

Dr. J. A. B. Adcock, secretary of the Missouri State Board of Health, reports the written examination held at Kansas City, September 20-22, 1909. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 57, of whom 37 passed and 20 failed. The following colleges were represented:

College	Year Grad.	Total No. Examined.
PASSED		
Howard University, Washington, D. C.	(1907)	1
Rush Medical College	(1909)	1
University of Kansas	(1907)	1
University of Louisville	(1909)	5
[illegible] lege of Medicine	(1909)	1
[illegible] Kansas City	(1909)	6
[illegible] St. Joseph	(1909)	1
[illegible]	(1909)	4
[illegible] ge of Missouri	(1909)	1
[illegible] (2, 1908)	(2, 1909)	4
Washington University, St. Louis	(1909)	2
St. Louis Coll. of Phys. and Surg. (1908)	(3, 1909)	4
Columbia University, College of Phys. and Surg.	(1907)	1
University of Pennsylvania	(1900)	1
Memphis Hospital Medical College	(1909)	1
Meharry Medical College (1908)	(2, 1909)	3
FAILED		
University of Kansas (1896)	(1907)	2
University Medical College, Kansas City	(1909)	3
Barnes University (1907)	(7, 1909)	8
St. Louis Coll. of Phys. and Surg. (1908)	(2, 1909)	3
Kansas City Hahnemann Medical College	(1909)	1
Ensworth Medical College	(1909)	2
Meharry Medical College	(1907)	1

Michigan October Report

Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, reports the written examination held at Lansing, October 12-14, 1909. The number of subjects examined in was 14; percentage required to pass, 75. The total number of candidates who took the final license examination was 10, all of whom passed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
University of Southern California	(1909)	91
College of Physicians and Surgeons, Chicago	(1909)	84 1
Northwestern University Medical School	(1909)	81.4
Detroit College of Medicine	(1909)	80.5
University of Michigan, Coll. of Med	(1908)	78.7, 82.2, 92.1
Univ. of Michigan, Homeo. Dept....(1894) 77.1;	(1909)	85.2
Long Island College Hospital	(1892)	82.5

Minnesota October Report

Dr. W. S. Fullerton, secretary of the Minnesota State Board of Medical Examiners, reports the examination held at St. Paul, October 5-7, 1909. Aside from the written examination, practical tests were given in pathology, bacteriology, histology and urinalysis. The number of subjects examined in was 10; total number of questions asked, 110; percentage required to pass, 75. The total number of candidates examined was 20, of whom 13 passed and 7 failed. Twenty-two candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
College of Physicians and Surgeons, Los Angeles	(1908)	78.9
Northwestern Univ. Med. School....(1908) 76.8;	(1909)	79, 83.4
Fort Wayne College of Medicine	(1898)	76.6
University of Maryland	(1905)	77.8
Boston University	(1909)	78.2
University of Minnesota, Coll. of Med.	(1909)	77.4, 77.7, 80, 80
University of Minnesota, Homeopathic Dept	(1907)	75.4
Hamline University	(1908)	79.3

FAILED

College	Year Grad.	Per Cent.
sity Medical School	(1909)	67.9
and Surgeons, Chicago	(1909)	69.9
................(1907) 54.6;	(1909)	72, 72
St. Louis University	(1908)	59.9
McGill University, Montreal	(1909)	72.5

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with.
Rush Medical College. (1895) Wisconsin; (1906)	(1908)	Illinois
College of Physicians and Surgeons, Chicago	(1905)	
......................Wisconsin; (2, 1908)	(1909)	Illinois
Chicago College of Medicine and Surgery	(1909)	Illinois
Northwestern University Medical School	(2, 1908)	Illinois
Indiana Medical College	(1906)	Illinois
College of Physicians and Surgeons, Keokuk	(1888)	Iowa
lege of Medicine	(1905)	Iowa
lege	(1904)	Iowa
icine............(1895)	(1907)	Michigan
College of Medicine	(1908)	Michigan
	(1908)	N. Dakota
Ensworth Central Medical College	(1906)	Kansas
Ohio Medical University	(1906)	Ohio
Trinity Medical College, Ontario	(1897)	N. Dakota
University of Berlin, Germany	(1868)	Iowa

Mississippi October Report

Dr. S. H. McLean, secretary of the Mississippi State Board of Health, reports the written examination held at Jackson, Oct. 12-13, 1909. The number of subjects examined in was 8; total number of questions asked, 64; percentage required to pass, 75. The total number of candidates examined was 80, of whom 21 passed, including 5 non-graduates, and 59 failed, including 25 non-graduates. The following colleges were represented:

PASSED

College	Year Grad.	Total No. Examined.
Birmingham Medical College	(1909)	1
Chicago College of Medicine and Surgery	(1909)	1
University of Louisville	(1909)	1
Tulane University of Louisiana	(1906)	1
Mississippi Medical College	(1909)	3
Jefferson Medical College	(1909)	1
University of Tennessee	(1909)	1
ical College	(1909)	4
College	(1909)	1
	(1903)	1
University of Virginia	(1908)	1

FAILED

College	Year Grad.	Total No. Examined.
Georgia College of Eclectic Medicine and Surg.	(1908)	1
Atlanta College of Physicians and Surgeons	(1903)	1
Southern Medical College, Atlanta	(1882)	1
Flint Medical College	(1909)	2
Louisville Medical College............(1892)	(1904)	2
Mississippi Medical College........(1907)	(2, 1909)	3
St. Louis College of Physicians and Surgeons	(1908)	1
Leonard School of Medicine	(1909)	1
Hahnemann Medical College and Hospital, Phila.	(1908)	1
University of Nashville	(1905)	1
Memphis Hosp. Med. Coll..(1903) (2, 1908)	(3, 1909)	6
University of Tennessee	(1909)	1
Meharry Med. Coll..(1905) (1907) (4, 1908)	(5, 1909)	11
Knoxville Medical College	(1909)	1
College of Physicians and Surgeons, Memphis	(1908)	1

Medicolegal

Health Powers Versus Private Rights

The Supreme Court of Vermont says, in the case of State Board of Health vs. Village of St. Johnsbury and others (73 Atl. R. 581), that a statute of that state gave the board the general oversight and care of all waters used by any cities, towns, villages, or public institutions, or by any water or ice companies in the state as sources of water supply, and authorized the board to prohibit any town, city, village, public institution, individual, or water or ice company from using water or ice from any given source whenever in its opinion the same was so contaminated, unwholesome, or impure that the use thereof endangered the public health. This statute cannot be said to be palpably in conflict with the constitution, state or federal; nor can it be confidently asserted that the means prescribed by it have no just relation to the protection of the public health and the public safety. It must be held, therefore, that the board has authority, if properly exercised, to restrain the defendants, as it did, from the furnishing and the use of the village water for domestic purposes until, in the opinion of the board, the danger to the public health ceases.

It was contended that no order could lawfully be made by the board in restraint of the personal liberty of the citizen, for, if water was furnished by the village in its mains and taken into the houses, the board had no authority to punish those who used it for domestic purposes; that the owners of the houses had the right to drink it, and their tenants had the same right, even though forbidden, etc. But the right of the people of the state by their legal representatives of governing and regulating the internal police of the state embraces such reasonable rules and regulations, established directly by legislative enactment, as will protect the public health and the public safety. And the state may invest local or state boards created for administrative purposes with authority in some proper way to safeguard the public health and the public safety. The way in which these results are to be accomplished is within the discretion of the state, provided the powers and functions of the general government are not thereby infringed, nor any constitutional provision of the state or the United States.

If the mode adopted by the state for the protection of the public health and safety of its local communities proves to be objectionable, inconvenient, or even distressing to some, if nothing more can reasonably be affirmed against the statute, the answer is that it is the duty of the constituted authorities primarily to keep in view the welfare and safety of the many, and not to permit their interests to be subordinated to the wishes or the convenience of the few.

Questionable and Inadmissible Evidence in Malpractice Case

The Supreme Court of Michigan says that the plaintiff in the malpractice case of Farrell vs. Haze (122 N. W. R. 197) sustained, on a Tuesday, an injury to his right foot, ankle and leg—a "Potts fracture." The defendant was employed, and put the injured member in a plaster of paris cast. As things went, if he cut—opened—the cast on Wednesday, he was admittedly without fault. If he did not cut it until Sunday, and if the foot and leg were then in the condition described by plaintiff and his witnesses, he did not exercise ordinary professional skill and judgment, and for the resulting injury he was liable. The defendant testified that he cut the cast on Wednesday, the next day after the injury. He kept books and employed a bookkeeper. It was his practice to make a memorandum of visits to patients on prescription blanks and to hand the memoranda to his bookkeeper for entry by her into a daybook. She also kept a ledger. The slips, daybook and ledger were produced in court, and were offered and received in evidence over the objection that they were all immaterial, incompetent and self-serving. The purpose in offering them was not to show the state of an account with the plaintiff, but to corroborate the defendant's testimony concerning the date of cutting the cast by a memorandum made by him at the time. The court avoids deciding whether the memoranda were really admissible in evidence for the purpose stated or not. It merely says that, assuming, but not deciding, that the memoranda were evidence to the jury of the facts contained in them, it was within the discretion of the court to allow them to be taken to the jury room, and it was not an abuse of that discretion to refuse to allow them to be taken there.

It was one of the undisputed facts in the case that the bones in the foot and ankle became diseased, and that this condition rendered amputation necessary. What caused the bones to become diseased? The plaintiff's contention was that most probably the cause was the treatment received from the defendant. But the opinions of the experts did not support this contention. It is not enough to show a state of facts equally consistent with unskillfulness and negligence and with skillfulness and due care. Therefore the jury should have been instructed by the judge, as requested, that: "The question whether the loss of the plaintiff's foot was attributable to anything that the plaintiff claims the defendant did or omitted to do is a scientific question, which the jury cannot determine for itself, and can be answered only by an expert; and inasmuch as no expert or medical man or surgeon has stated that the loss of the foot in his opinion came from anything the defendant did or omitted to do, therefore I charge that you cannot take the loss of the foot into consideration in this case or hold the defendant liable therefor."

The plaintiff produced in court, but under covering, what were stated to be the bones of the amputated limb, and proposed to exhibit them. The court is of opinion that they should not have been produced or offered in evidence. It is conceivable that if they were in the same condition they were after the injury, and while the defendant was treating the limb, the extent and nature of the various fractures produced by the injury being in question, their examination and perhaps their production in court would have been of value. But the plaintiff has proved that various portions of the bones were removed before the amputation took place. He had proved that their condition before and at the time the limb was amputated indicated a gradual and continuing disintegration of the bones from some cause which was active long after the defendant ceased to treat the injury. It could not be apprehended that the jury would be enlightened or instructed by an examination of the remains by themselves or by witnesses in their presence.

Again, the court holds that one who is not possessed of the requisite qualifications of a physician and surgeon cannot be exempted from liability on the ground that his mistake was caused by an error of judgment. But want of requisite qualifications is not shown by proving that he was discharged by a patient and another physician hired who changed the treatment.

A physician, who testified that the defendant possessed the skill of the average surgeon, was asked, on cross-examination, if he knew of the defendant's treating certain cases, and particularly one where he was discharged and the treatment entirely changed. The court says that it could perceive no purpose in asking these questions, except the one of producing by incompetent means and without tendering the necessary issue the impression that the defendant was lacking in professional skill because he had failed in other cases to satisfy his patients and the physician who succeeded him.

The judgment obtained by the plaintiff is reversed and a new trial granted.

Sufficient Evidence as to Practicing Without a License

The Supreme Court of Washington says, in the case of State vs. Dodson (102 Pac. R. 872), where it affirms a conviction of practicing medicine without a license, that it was contended that under the provision of the statute the state did not make out a prima facie case against the defendant, because it did not show that he had not been a practicing physician prior to the enactment of the statute under which he was convicted. But it is held sufficient that the state showed by the clerk that the defendant had not filed a license in his office, and that none had been filed. The statute makes the records of the clerk's office prima facie evidence of the existence or nonexistence of a license.

Again, the court says that the statute provides that "any person shall be deemed as practicing medicine within the meaning of this act who shall have and maintain an office or place of business with his or her name and the words physician or surgeon, "Doctor," "M. D.," or "M. B." in public view, or shall assume or advertise the title of doctor or any title which shall show or shall tend to show that the person assuming or advertising the same is a lawful practitioner of any of the branches of medicine or surgery in such a manner as to convey the impression that he or she is a practitioner of medicine or surgery under the laws of this state." Evidence to prove that the defendant had done the things prescribed by the statute was offered, and it was for the jury to determine the weight of such evidence.

Current Medical Literature

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

November 20

1 Aspects of Rocky Mountain Spotted Fever as Shown by Recent Investigations. H. T. Ricketts, Chicago.
2 *Creosote Treatment of Pulmonary Tuberculosis. B. Robinson, New York.
3 Plea for a Reform in Medical Education. E. Souchon, New Orleans.
4 Idiopathic Hydropneumothorax with Complete Recovery. A. P. Francine, and H. R. M. Landis, Philadelphia.
5 A Fragmented Filiform Bougie Removed from the Male Urethra Without Operation. V. C. Pedersen, New York.
6 *A Statistical Analysis of over 68,000 Cases of Typhoid. A. K. Sallom, Philadelphia.
7 Acute Gangrenous Cholecystitis; Gall-Stone in the Cystic Duct; Perforation of the Gall-Bladder. E. Williams, Patterson, La.

2. **Creosote Treatment of Pulmonary Tuberculosis.**—Robinson repeats that by the combined, persistent, intelligent use of beech-wood creosote internally and by inhalation, many patients may be saved who otherwise would die. In nearly all cases, no matter what the stage of the disease, much relief to symptoms may be obtained. This treatment is simple and inexpensive, and interferes with no other rational doing. It greatly supplements that doing. Creosote treatment is of great value as a preventive treatment, when pulmonary tuberculosis is a menace to the individual, either by reason of constitutional tendency, exposure to infection, or both. To judicious rest, when required, fresh air, and proper food, add creosote treatment, with or without lime salts, and there is at present little or nothing in the way of further treatment to insist on.

6. **Typhoid.**—This report represents a study of the cases of typhoid fever which have occurred in Philadelphia during a period of eleven and one-half years. From January, 1898, to June, 1909, there occurred 68,943 cases. Of this number 8,102 patients died, giving a mortality of slightly over 11.75 per cent. The greatest number of cases occurred in February, there being an average of 759 cases. January is a close second, averaging 694 cases. The average number of cases for each month then gradually falls, reaching its lowest ebb during July. It again rapidly rises, reaching a second maximum during September. During October and November it falls, to rise again in December. From the data at hand Sallom believes that the filtered water has been instrumental in the reduction of the number of cases of typhoid, for it appears that while the number of cases was greatly reduced in the district receiving filtered water, typhoid fever was still prevalent in the district not receiving filtered water, and in this manner increasing the general number for the entire city.

Boston Medical and Surgical Journal

November 18

8 Recent Experimental Work on Hemorrhagic Conditions. W. P. Lucas, Boston.
9 *Treatment of Summer-Diarrhea as Influenced by Etiology. C. H. Dunn, Boston.
10 Hodgkin's Disease in a Child. H. De Wolf, Providence, R. I.
11 *Cure of Club-Foot in Infancy without Operation. A. Ehrenfried, Boston.

9. **The Treatment of Summer Diarrhea.**—The treatment of the diarrheal diseases prevalent in the summer should, Dunn believes, be based on the known facts as to the etiology of the disease. This may, for the four types, be briefly summarized as follows: 1. Acute nervous diarrhea: Castor oil or calomel, temporary dilution of food, paregoric in persistent cases. 2. Acute intestinal indigestion, type of deficient secretion, irritative diarrhea: Castor oil or calomel, boiled water for twenty-four hours, barley water or other carbohydrate solution for a second twenty-four hours, followed by dilute milk modifications, with low fat and casein and high sugar and whey proteid; irrigation of the colon in long-standing cases. 3. Acute intestinal indigestion, fermentation type, fermental diarrhea: Castor oil or calomel, boiled water for twenty-four hours, barley water for the second twenty-four hours; avoid proteid foods, such as albumin water or whey. It is safest not to begin milk-feeding till the third day, and then very cautiously, with modifications low in fat, whey proteid and casein. Living lactic acid bacilli are a specific against this disease and are given in ripened fat-free milk or in buttermilk, which is best begun after forty-eight hours; subsequent feeding according to the type of indigestion also present; irrigation of the colon twice daily; antidysenteric serum in resistant cases.

11. **Club-Foot in Infancy.**—The treatment which Ehrenfried has practiced consists in manipulations and retention. The manipulation is performed after this fashion: The ankle is held firmly by the fingers of the left hand. The right hand gently but firmly grasps the forefoot, which, the heel being fixed, should be gradually abducted as far as possible. If the manipulations cause pain the infant will become rebellious and spasm of the muscles will be set up, which will interfere with the desired object. This abduction should be repeated several times, each time carrying the foot out as far as possible and holding it a few seconds, allowing it to return gradually. Then the same procedure, supplemented by eversion of the foot, should be repeated for a minute or two. The entire foot should be gradually everted until the sole looks outward. Then, with the foot abducted and everted, dorsiflexion at the ankle should be practiced. Finally, the entire foot may be circumducted about the ankle. After the foot has been rendered as flexible as may be by this procedure, it is fixed in the position of greatest correction or overcorrection allowable, by some retentive apparatus. The purpose of this retention is to maintain the stretch on the structure already noted and at the same time to allow the lax opposing structures to contract and to prevent and correct the maldevelopment of the bones of the ankle. Fixation may be had best by means of plaster of Paris. The plaster is applied from thigh to tips of toes, with the knee flexed, so as to prevent the cast from twisting on the leg, and allowing a return of the varus deformity. If the plaster is applied to the best advantage three two-inch rolls are ample in a young infant. Of the first roll, half is used in making a collar about the forefoot. This is applied—the foot hanging relaxed—in such a way, with circulars and reverses, as to lie snugly against the foot. It should extend to the tips of the toes, but should not cramp them or hide their extremities. It should fit closely against the inner border of the great toe, to its very tip, so as to give efficient leverage in abduction. The remainder of the roll is applied in circular turns about the thigh, carried as high up as possible. When the collar has become solid the second roll is applied, in the form of circular turns over the thigh and under the ball of the foot. This roller should always be applied in such direction that the turns, when drawn tight, will naturally assist in elevating the outer border of the foot, and maintaining eversion. The third roller is put on immediately and is used to cover in the knee and heel. The plaster here need not be thick, as it is not essential in maintaining the position; and for the sake of lightness it had best be applied in recurrent turns. Plasters are reapplied every two weeks, each time after thorough manipulation.

Ehrenfried has found it an advantage in some cases to make use of a splint after the plasters have been discontinued. This is made of tin with an upright of heavy iron wire which can be bent so as to give any degree of dorsiflexion or eversion. It is applied to the leg, over sheet bandage. In convalescence it may be worn only at night and the foot manipulated by the mother or nurse in the morning after it is removed and at night before it is applied.

New York Medical Journal

November 20

12 Development of the Medical Profession. S. W. Mitchell, Philadelphia.
13 *Differential Points in the Skin Lesions of Pellagra. I. Dyer, New Orleans.
14 *Antigen in Pellagra. C. C. Bass, New Orleans.
15 *Treatment of Gastric Ulcer. M. Einhorn, New York.
16 *An Outline for a Coordinated Attack on Tuberculosis. L. Brown, Saranac Lake, N. Y.
17 Certain Contagious Diseases of the Skin. F. C. Curtis, Albany, N. Y.
18 Use of Mercury Succinimid in Superficial Tuberculous Lesions. R. Hertzberg, Stamford, Conn.
19 Tonsil Removal. E. V. Hubbard, New York.

13, 14. Abstracted in The Journal, Nov. 13, 1909, pp. 1663, 1665.

15. **Gastric Ulcer.**—The indications for any surgical treatment of gastric ulcer, according to Einhorn, are as follows:

1. In large, recurrent gastric hemorrhages threatening life, the ulcer ought to be excised in the interval of a gastroenterostomy established, to prevent renewed hemorrhage.
2. Small losses of blood that cannot be checked and endanger life through their persistence require similar treatment.
3. Perforation of the ulcer demands always immediate operation (excision or invagination of the defect and suture) as soon as the diagnosis has been made.
4. An ulcer situated at the pylorus and attended with peristaltic restlessness of the stomach and continuous hypersecretion.
5. Advanced stenosis of the pylorus requires gastroenterostomy.
6. Duodenal ulcers accompanied by pylorospasm and beginning peristaltic restlessness of the stomach.
7. Gastric ulcers with formation of a tumor, no matter where the seat (pylorus, small curvature, etc.), always demand gastroenterostomy, usually with excision of the tumor. If this tumor is situated in the lesser curvature and cannot be resected, it is still curable in case it is caused by simple connective tissue proliferation (callous ulcer formation).

16. **Coordinated Attack on Tuberculosis.**—Results at the Adirondack Cottage Sanitarium show that up to November, 1908, when the records covering twenty-two years are roughly scanned, 52 per cent. of the patients in an incipient stage, 25 per cent. of the moderately advanced, and less than 2 per cent. of those in far-advanced stages are alive. In other words, a patient in the incipient stage has at least twenty-six times as good a chance of permanent recovery as one in the far-advanced stage. In view of the fact that tuberculosis is now said to be so curable that all a patient needs is fresh air (some would deny any tempering of the cold to the shorn lambs), a chair, and some milk and eggs, in view of this, these figures are of importance. Not every patient with tuberculosis will recover, no matter how early his case is diagnosticated, and no matter how soon put under the most approved treatment. But in an early case the patient has twenty-six times better chances for permanent recovery than in a late one.

Medical Fortnightly, St. Louis

November 10

20 *Operation for the Restoration of the Female Pelvic Outlet Based on the Anatomic Structure and Physiologic Functions of the Parts. W. L. Crosthwait, Holland, Tex.
21 Mastoiditis and Other Complications of Acute and Chronic Suppurative Otitis Media. E. E. Clark, Danville, Ill.
22 Local Versus General Anesthesia. B. M. Ricketts, Cincinnati.

20. **Restoration of Female Pelvic Outlet.**—Crosthwait describes a technic for the average case in which the perineal body has been broken up by laceration of component part or parts with rectocele and pouting vagina resulting. The operation is the open flap-splitting one, giving free exposure of the external sphincter and levator ani and superficial transverse perinei with their fascia. A U-shaped incision is made from just below the orifice of the glands of Bartholin along the mucocutaneous margin. By blunt dissection, the posterior wall of the vagina is separated from the rectum up to the highest point of the rectocele and laterally as far as the scar tissue extends and far enough to give free exposure of the margins of the levator ani muscles and their fascia. This point is important, for the fascia has more to do in restoring strength to the injured parts than the muscle tissue itself.

The second step is to suture the levator ani and fascia. From two to four sutures are required and the suture material should be fifteen-day chromic catgut. It is important that these sutures be placed far enough out to include the fascia. They should be placed so as to lap the edges of the muscles. The next step is to bring up the severed ends of the bulbocavernosus and external sphincter ani and unite them in the perineal center. Then the fibers of the transverse perinei are caught up and inserted in their normal place. This, however, cannot always be done, as those muscles when parted from their insertion often retract so far that they cannot be found. The last step is to suture the flap vertically with buried twenty-day catgut.

The advantages of this operation are said to be: 1. There is exact anatomic approximation of the parts. 2. It gives a permanent cure with full restoration of lost function. 3. It is far less painful during the process of healing, with no sutures to remove. 4. It can be done in far less time than any other method.

New Orleans Medical and Surgical Journal

November

23 Ophthalmic Surgery. H. D. Bruns, New Orleans.
24 Abdominal Pain. J. T. Halsey, New Orleans.
25 Abdominal Pain from a Surgical Standpoint. J. A. Danna, New Orleans.
26 *The Hyperacid Stomach. S. K. Simon, New Orleans.
27 The Diagnositic Value of Blood Examination. C. C. Bass, New Orleans.
28 *Treatment of Syphilis by Mercurial Inhalations in a Proper Hot Room. S. Schiro, New Orleans.

26, 28. Abstracted in The Journal, May 29, 1909, p. 1782.

Archives of Diagnosis, New York

October

29 *Diagnosis of Angina Pectoris. G. R. Butler, Brooklyn.
30 Prognosis in Pneumonia. D. Rochester, Buffalo.
31 Sense of Weight in the Lung in Diagnosis of Lobar Pneumonia. T. F. Reilly, New York.
32 *Present Status of Still's Disease. G. R. Pisek, New York.
33 Significance of Low Blood-Pressure in Arteriosclerosis. L. F. Bishop, New York.
34 The Surgeon's Tentative Diagnosis of Eye-Strain. R. T. Morris, New York.
35 Recognition of Obscure Types of Gastric Ulcer. A. Bassler, New York.
36 Sigmoid Diverticulitis. D. N. Eisendrath, Chicago.
37 Thrombosis and Embolism of the Mesenteric Vessels. H. Fischer, New York.
38 Technic in Gynecologic Diagnosis. J. V. Young, New York.
39 Prognosis. S. Salinger, Chicago.
40 The Diagnosis of Painful Conditions of the Feet. S. Epstein. New York.

29. **Angina Pectoris.**—That the diagnosis of angina pectoris, at least in its milder forms, cannot be made from the history alone, is contended by Butler. The other forms of cardiac pain, of toxic or neurotic origin, the latter especially in women, may exactly simulate a true angina pectoris. After allowing due weight to the age, sex, and detailed history of the patient, it is necessary to ascertain the presence or absence of signs of organic disease at the root of the aorta. On this hangs an enormously important decision. When plain signs of general arterial or aortic disease co-exist with a history of precordial pain, there need be no hesitation in making a positive diagnosis of true angina pectoris. But it is otherwise in patients with cardiac pain in whom, as may happen, the accessible arteries are soft, and who do not present signs of gross aortic or pericardial lesions.

In the election between true and false, organic or functional, there is one physical sign which Butler believes casts the controlling vote. It is so slight, and apparently so insignificant, that one almost hesitates to mention it. It is simply a slight clicking sound, of a harsh or rough quality, accompanying, or following at a barely perceptible interval, the sound of aortic closure. It is not an accentuation of the closure sound of the valve, such as the loud, clean, "cork and bottle" aortic second sound, which is signficant of high arterial tension. Nor is it to be confused with a reduplication of the second sound. The slight harsh click, to which Butler refers, is said to suggest to the ear a definite roughening or thickening of the edges of the aortic cusps. When autopsies have been obtained the findings have justified such an interpretation of this auscultatory sign. If, then, the aortic cusps are roughened, it is certainly a fair inference that the root of the aorta shares in the diseased process. Butler recalls but two cases of true angina in which this sound has not been heard.

32. **Still's Disease.**—Pisek holds that the polyarthritis described by Still seems to be the result of a chronic sepsis, which while not sufficiently potent to completely overpower the young organism, has destroyed resistance by enfeebling the phagocytic power of the blood, and lowering the activity of the lymphatics. This special form of chronic arthritis, he considers, is worthy of consideration by the general practitioner, as the prognosis is not necessarily hopeless.

Journal of the Oklahoma State Medical Association, Muskogee

November

41 Organization of the Medical Profession. B. J. Vance, Oklahoma City.
42 Treatment of Pulmonary Tuberculosis. W. G. Little, Okmulgee.
43 Gynecologic Conditions. O. R. Jeter, Reed.
44 Placenta Prævia. M. M. De Arman, Mangum.
45 Treatment of Acute Articular Rheumatism. L. F. Watson, Oklahoma City.

Cleveland Medical Journal

November

46 Ten Years' Progress in Protein Metabolism. O. Folin, Boston.
47 Gastric Ulcer. C. F. Hoover, Cleveland.
48 *Precision in the Treatment of Whooping Cough. E. F. Cushing, Cleveland.
49 Clinical and Expe [illegible] ged Infantile Tetany. H. J. [illegible]
50 Achondroplasia; [illegible] Report. H. Hempstead, Cleveland.
51 Acute Anterior Poliomyelitis with Report of Two Cases. H. B. Ormsby, Cleveland.
52 Diagnosis of Tuberculous Hip-Joint Disease. W. G. Stern, Cleveland.
53 Foreign Body in the Right Bronchus. S. H. Large, Cleveland.

48. **Treatment of Whooping Cough.**—At the onset of treatment Cushing has found it well to require that for a week or so the patient be kept in bed. Even when the patient is first seen in the paroxysmal stage of the disease, the brief stay in bed is eminently useful, for the control thus secured enables the physician to initiate his measures of isolation and treatment under the most favorable auspices. In the presence of complications of any sort, or when the disease itself is of a severe type, the paroxysms frequent, and vomiting troublesome, confinement to bed is, of course, indispensable at any period of the illness. At night every window in the child's bedroom should be kept wide open. The cold fresh air of a winter night is far the most efficient nocturnal sedative for the cough of pertussis. That the paroxysms of whooping-cough usually occur more often at night than during the day, as described in the books, is entirely due to vitiated air in the sleeping-room. It is an artificial and not an essential feature of the malady. During the daytime the patient should be indoors as much as possible. Running, or romping, or too vigorous play of any sort, loud laughter or screaming, should be avoided as likely to provoke paroxysms.

The child's meals, even when it is about, and the attack is mild, should not be taken at the family table, but eaten in the nursery to secure quiet, slowness of eating, and an easy control of quantity, for overeating almost invariably provokes a convulsion of cough which brings up all the food taken. For quite another reason, too, the child should be kept from the table and from all other unnecessary contact with the adults of the household, and that is, the risk of contagion to the latter if brought in close range of the cough explosions.

Of drugs, belladonna and antipyrin, and for a sedative, heroin or opium, in the form of paregoric or Dover's powder, have served Cushing best. He commences treatment with a belladonna dose after each meal and heroin at bedtime. The belladonna is given in the way Jacobi has so often advised, that is, beginning with a drop, or even a half-drop of the tincture, to anticipate a possible idiosyncrasy on the part of the patient; the dose is increased one drop each day until a point is reached where within an hour from the time the medicine is taken a distinct flushing of the cheeks occurs. In the child this erythema develops, as a rule, before an uncomfortable dilatation of the pupils results; and when the dose is found which occasions it, a distinct lessening in the intensity and number of the paroxysms is ordinarily apparent. Short of this effect, belladonna seems without influence on the disease, but when the flushed cheeks show themselves, betterment is the rule. Six or eight drops of the ticture of belladonna are usually sufficient to produce the desired effect in a child from 6 to 8 years old, and this dose should then be continued for a long period. If, on the other hand, no effect on the frequency of the coughing fits is apparent, the belladonna is omitted, and antipyrin administered in its stead, in a dose of 1 grain for each year of the child's age, in solution, and given 3 times a day after meals. At bedtime an appropriate dose of heroin or paregoric or Dover's powder needs ordinarily to be administered.

Denver Medical Times and Utah Medical Journal

November

54 What is the Citizen's Duty Toward the Teaching of Social Health? A. S. Taussig, Denver.
55 The Care of Chronics and Incurables. J. K. Miller, Greeley, Colo.
56 Colds (Acute Coryza). Z. V. Dworzak, Denver.
57 A Singer's Sore Throat. J. E. Free, Billings, Mont.
58 Quarantine Laws in Relation to Tuberculosis—Their Necessity. W. T. Hasler, Lehi, Utah.
59 Syphilis and Gonorrhea. J. McGregor, Parowan, Utah.
60 Bryonin. R. J. Smith, Collinston, Utah.

American Journal of Obstetrics and Diseases of Women and Children, New York

November

61 *Treatment of Retrodisplacements of Uterus. W. H. Humiston, Cleveland, Ohio.
62 *Combined Intraperitoneal and Extraperitoneal Ureterolithotomy for Removal of Stones from the Lower Ureter. E. Jonas, St. Louis.
63 *Surgical Treatment of Tumors of the Bladder. J. W. Keefe, Providence, R. I.
64 *Operative Enlargement of the Pelvis of the Nonpregnant Woman. J. N. Bell, Detroit.
65 *Chylous Cyst of the Iliac Mesentery. C. E. Congdon, Buffalo.
66 *Embryo Abdominal Surgeons with Inadequate Preparation and Knowledge. J. H. Carstens, Detroit.
67 *When Shall we Operate for Ruptured Ectopic Gestation. R. R. Huggins, Pittsburg.
68 *Artificial Anus Following Operation for Intussusception: Three Years' Complete Occlusion of Large Bowel: Method of Restoring Continuity. J. Y. Brown, St. Louis.
69 Personal Experiences in Gall-Bladder Surgery. H. E. Hayd, Buffalo.
70 *How Can we Best Educate Women to Seek Relief Early from Carcinoma of the Uterus? C. C. Frederick, Buffalo.
71 *Calcareous Degeneration of the Fibroid Uterus: Presentation of Specimen. W. B. Dorsett, St. Louis.
72 Nephrocoloptosis. H. W. Longyear, Detroit.
73 *Rupture of the Uterus During Labor. R. W. Lobenstine, New York.
74 Ovarian Pregnancy at Term; Recovery of Mother and Child. W. C. G. Kirchner, St. Louis.
75 *Study of 440 Operations on Appendix. E. J. Ill, Newark, N. J.
76 *Diagnosis Between Appendicitis and Tubal Diseases. R. T. Morris, New York.
77 *Phlegmasia Alba Dolens in Connection with Ovarian Tumor. W. A. B. Sellman, Baltimore.
78 Phases of Puerperal Sepsis. H. O. Pantzer, Indianapolis.
79 Recent Studies of Diarrheal Diseases. W. L. Carr, New York.

61. **Retrodisplacements of Uterus.**—Humiston divides the cases of retrodisplaced uterus into two classes: a smaller one in which active major surgical measures are not required to obtain a cure, and a larger one in which active surgical procedures are necessary. In the first group are all those cases of retroversion of not long standing, and in which there has been no infection or inflammation of the appendages. In most cases of this group miscarriage or labor recently occurred. The prominent symptoms presented are backache, occipital headache, bearing down feeling while in the upright position, frequent but not painful micturition, constipation, disturbed digestion, and an increasing nervousness. Menstruation is increased in amount and frequency, but is not, as a rule, painful. Some leucorrhea is always present. Digestive disturbances are usually prominent. Bimanual examination, as a rule, reveals injury to the pelvic floor and perineum, cervix lacerated, swollen and in axis of vagina. Cervix easily reached with finger, and a continuous resisting body from posterior wall of cervix as far as finger can reach, which is movable. Ovaries can be palpated and are movable and but little increased in size. Fundus of uterus is absent in front. These patients can be cured by curettage, trachelorrhaphy, replacement of uterus, adjustment of well-fitting pessary, and repair of the pelvic floor and perineum by a method that will insure a muscular restoration of the parts.

Unfortunately, he says, 90 per cent. of these cases are complicated when specialists see them, and in these cases, in addition to the above operations, the abdominal cavity is opened and the diseased conditions found dealt with. The results Humiston has obtained with the Gilliam method in 103 cases in three years are highly satisfactory. He has had no deaths in the series, nor have there been complications at delivery in those patients who subsequently became pregnant. All were delivered without artificial aid, except in one case, where low forceps were used. No connection could be traced between the Gilliam operation and the procedure.

62. Abstracted in The Journal, Oct. 2, 1909, p. 1121.

63, 65, 66, 67, 71, 73. Abstracted in The Journal, Oct. 9, 1909, pp. 1217, 1218, 1219.

64. **Operative Enlargement of Pelvis.**—Bell suggests that in order to obviate the dangers of pubiotomy the pelvis might be enlarged by operating in the non-pregnant state, and thus prepare the woman for future delivery. The indications for the operation are, according to Bell: A history of two or more difficult deliveries with child born dead, further attempts to secure a living child by premature delivery, a true conjugate diameter of from 7.5 to 8.5 cm., a dread of Cesarean section, and a strong desire on the part of the patient to give birth to a living child. It is granted that only a comparatively small increase in the pelvic diameters can be secured when operating in the non-pregnant state, yet, in a properly selected case the increase is just sufficient to convert an otherwise dangerously contracted pelvis into a comparatively normal one for future childbearing.

In doing the operation in one case, he followed the method of Döderlein in his operation of pubiotomy at term, and spread the severed ends of the bone 1.5 cm., holding them apart with a small steel retractor which was left *in situ* for ten days. There was very little hemorrhage. Healing was slow; but the patient recovered and walked without any discomfort. The pelvic measurements show an increase in the transverse diameters. This proves conclusively that a distinct enlargement of the pelvis can be obtained by operating in the non-pregnant state and preparing the woman for future childbirth. The question of the advisability of this procedure remains to be determined.

68. **Artificial Anus.**—As the result of an appendicitis operation improperly performed, the patient, a boy, had an artificial anus in the median line, through which all fecal matter had passed for three years and a half, there being complete exclusion of the entire large bowel for that length of time. The patient had not had a natural bowel movement during all this time. Brown believes that the boy undoubtedly did not have appendicitis, but that the original condition was intussusception. One of the most interesting features of this was the condition of the ileum from an obstructed band of the ileocecal valve. As stated, the entire large bowel was out of commission for three and one-half years. The most remarkable condition was an ileoitis obliterans, the ileum having contracted and swollen to such an extent that it was almost impossible to get a small grooved director through it. The appendix was free, but showed that it had participated in the peritonitis brought about by the intussusception and the fecal leakage, but to all appearances this was a secondary and not a primary incident. By means of an ileocolic lateral anastomosis the fecal current was turned back into the large bowel.

70, 75, 76, 77. Abstracted in The Journal, Oct. 16, 1909, pp. 1323, 1324.

Journal South Carolina Medical Association, Florence

October

80 Strychnin in Treatment of Cerebral Hemorrhage. M. J. D. Dantzler, Elloree.
81 Similar Symptomatology in Chronic Appendicitis and Chronic Gall-Bladder Lesions. E. A. Baker, Charleston.
82 Uncinariasis, Miner's Anemia, Egyptian Chlorosis, Hookworm Disease. T. H. Symmes, Fort Mott.
83 Influence of Diseased Teeth and Mouth on General Health. W. E. McCord, Conway.
84 *A Talk to Doctors. J. N. McCormack, Bowling Green, Ky.
85 Tuberculosis Among Children. S. A. Visanska, Atlanta, Ga.
86 Diabetes Mellitus. J. B. Hughey,
87 Spina-Bifida; Report of a Rare Fo
88 Methods of Tying Surgical Knots.
89 The State Board of Health—Its Re mittee. C. F. Williams, Columbus.

84. Published in *Northwestern Lancet*, Oct. 1, 1909.

West Virginia Medical Journal, Wheeling

November

90 Duties of the Medical Profession. V. T. Churchman, Charleston.
91 Surgery of the Heart. G. Ackerman, Wheeling.
92 Production of Certified Milk. W. H. McLain, Wheeling.
93 Hydrophobia. K. M. Jarrell, Clear Creek.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

October

94 Constitutional Conditions Affecting Nasal Catarrh. C. W. Richardson, Washington, D. C.
95 Prognosis of Febrile Cases of Pulmonary Tuberculosis. H. L. Barnes, Wallum Lake, R. I.
96 *Three-day Treatment of Drug and Alcohol Habitúes with Hyoscin. H. V. Riewel, Cleveland, Ohio.
97 Neuroma of the Orbit. H. F. Hansell, Philadelphia.
98 The Adrenals in Sudden Death. C. E. de M. Sajous, Philadelphia.
99 Epithelioma. J. V. Shoemaker, Philadelphia.
100 *Contemporary Workman's Compensation. W. H. Allport, Chicago.

96. **Treatment of Drug and Alcohol Habitués with Hyoscin.**—Riewel summarizes his views as follows: 1. The hyoscin treatment will eliminate the desire of drug and alcohol habitués for these drugs, thus eliminating the element which prevents the patient abstaining by force of will power. 2. Having lost the desire they do very well without intoxicants or the drugs as shown by the increase in appetite, gain in flesh and their general improvement. 3. The question of relapse lies entirely in the sincerity and environment of the patient. 4. The favorable alcoholic addicts are those who earnestly desire to discontinue the use of intoxicants and are willing to change their mode of living and environment, but who cannot until relieved of the craving for liquor. 5. Relapse in both drug and liquor cases is not due to a desire nor suffering after the treatment, but to their curiosity to test the necessity of total abstinence, or to the temptations of social life. 6. A single dose of the drug or drink of liquor, even after one year of total abstinence, is very apt to start the craving, resulting in a condition which is no better than before treatment. 7. This method may prove a valuable treatment in apparently hopless cases of opium poisoning. Interesting experiments along this line might be carried out. 8. The one contraindication for this treatment is the presence of Bright's disease. 9. No patient should be treated unless put to bed and watched by competent nurses day and night during the first week.

100. Published in *Chicago Medical Recorder* and the *Illinois Medical Journal*, October, 1909.

Maryland Medical Journal, Baltimore

November

101 Surgery of the Thyroid (continued). R. Winslow, Braddock Heights.
102 Astereognosis Caused by Tumor of the Posterior Superior Portion of the Right Parietal Lobe. I. J. Spear, Baltimore.
103 Surgery of the Kidney. A. McGlannan, Baltimore.
104 The Almshouse Care of the Insane. N. M. Owensby, Baltimore.
105 Harvey (1578-1657 A.D.). H. M. Cohen, Baltimore.

Long Island Medical Journal, Brooklyn

November

106 Faucial Tonsils—Hypertrophied and Otherwise. C. E. Scofield, Brooklyn.
107 *Appendicitis in Children. A. H. Bogart, Brooklyn.
108 *Acute Anterior Poliomyelitis. Le G. Kerr, New York.
109 Blastomycosis. R. H. Fowler, New York.

107. **Appendicitis in Children.**—Bogart says that appendicitis in children is a comparatively frequent disease, insidious in its onset and rapid in its development, with a decided tendency toward the development of general peritonitis, with a fatal termination if neglected; and that whatever holds good with regard to immediate operation in the adult is doubly true in children, and that in the light of present knowledge no patient should be permitted to go for three days without operation. Bogart emphasizes the fact that the removal of the appendix in a child by a competent surgeon is comparatively without danger and recommends that it be done in every case as soon as a diagnosis has been made, provided that a competent surgeon and the proper facilities can be had to do it. In this and in no other way can the present mortality be reduced.

108. **Acute Anterior Poliomyelitis.**—In one epidemic, between Aug. 7 and Sept. 4, 1909, Kerr observed 53 cases of the disease, and the symptoms of the onset were as follows: Fever, accompanied with diarrhea, 10; fever, cough and diarrhea, 4; fever, vomiting, cough and diarrhea, 12; fever alone, 4; fever and constipation, 7; fever and vomiting, 3; fever and cough, 1; fever, cough, vomiting and constipation, 3; and no symptoms noted, 3. In the remaining 6 cases, the symptoms of the onset were those of a definite disease, associated with the other symptoms, and were diagnosed as follows: four suffered from tonsillitis, 1 from lobar pneumonia and 1 from acute gastroenteritis. From this it is seen that the more suggestive symptoms are the fever, diarrhea, cough and vomiting. With such symptoms present, and nothing else to guide us in the making of a definite diagnosis, we must take the position of withholding the expression of an opinion as to the disease present.

As soon as a child was suspected of having the disease, as indicated by the prodromal symptoms which are suspicious in the presence of a known epidemic, it was immediately placed in a hot blanket pack. The wet blanket was wrung out after being placed in water of the usual temperature, 160 F., and in this the child was wrapped with hot water bottles placed at the feet. The application was sufficiently prolonged to induce a free perspiration. This procedure was followed even in the presence of considerable rise in temperature, but was never repeated. The rather copious drinking of hot water was encouraged. In many instances the vomiting was almost immediately relieved and the free perspiration which was brought about by the hot blanket pack was continued or augmented. But even if the vomiting persisted or seemed to be increased by the ingestion of the hot water, its use was continued, although the amounts given were decreased. The administration of the water was continued for twelve hours.

The bowel was thoroughly emptied by a hot enema and in most of the cases this enema contained 1 ounce of magnesium sulphate and 2 ounces of glycerin to the quart of water. Immediately following the hot enema, the child was given a single large dose of castor oil, and was then placed in bed in a quiet and darkened room and allowed but one attendant. So far as possible the child was prevented from lying on the back. Cold applications were immediately made over the spine and particularly in the lumbar region. This was the procedure during the first twelve hours and no food was allowed during this period. At the end of the first twelve hours the hot enema was repeated and the ingestion of the hot water stopped. For two days the diet was restricted to fluids and if any further action of the bowel was needed calomel in broken doses was used. During this stage only two drugs were used, belladonna and ergot. Both were administered in full doses. Of the number so treated, in no instance was the child afflicted by any paralysis nor was there the further development of symptoms which would lead to the recognition of a definite disease.

Kansas City Medical Index-Lancet

November

110 *Hereditary Spastic Paraplegia: Report of Seven Cases in Two Families. J. Punton, Kansas City.
111 Renal Tuberculosis. W. T. Reynolds, Kansas City.
112 *Treatment of Asiatic Cholera During the Recent Epidemic. H. J. Nichols and V. L. Andrews, Manila, P. I.
113 Office Treatment of Hemorrhoids and Fissure. C. J. McGee, Leavenworth, Kan.

110. Abstracted in The Journal, July 31, 1909, p. 406.

112. Published in *Philippine Journal of Science*, April, 1909.

Surgery, Gynecology and Obstetrics, Chicago

November

114 *Technic of Resection of the Male Bladder. W. C. Lusk, New York.
115 *Postoperative Psychoses. H. A. Kelly, Baltimore.
116 Use of the Senses by the Surgeon. W. Van Hook, Chicago.
117 *Malignant Leiomyoma of the Uterus. M. W. Myer, St. Louis.
118 *Tuberculous Infections of the Peritoneum. W. H. Allport, Chicago.
119 *Spontaneous Rupture of Pyosalpinx into the General Peritoneal Cavity, Producing Acute Diffuse Peritonitis. C. W. Bonney, Philadelphia.
120 Ovarian Cyst with Twisted Pedicle Complicating Pregnancy—Operation. S. Rushmore, Boston.
121 Pitfalls in [illegible] B. Lewis, St. Louis.
122 Multiple [illegible] F. Proescher and E. W. Meredit[illegible]
123 *Treatment of Diffuse Septic Peritonitis from Appendicitis in the First Twenty-Four Hours. R. S. Fowler, Brooklyn.

124 Apparatus for Proctoclysis. P. Wroth, Hagerstown, Md.
125 Complete Division of Common Duct at Junction with Hepatic and Cystic Ducts, Suture and Complete Repair of Injury. I. S. Stone, Washington, D. C.

114. **Resection of the Male Rectum.**—The technic employed by Lusk includes the use of the combined routes—Rotter's technic of sectioning the descended bowel through the posterior wound after first liberating it through the abdominal approach, and Kraske's position of vertical elevation of the hips with the patient in the dorsal decubitus for suture of the bowel ends, as well as the method Kraske employs in sacral resection of dividing the proximal segment of bowel above the tumor with interrupted cuttings as the stitches are placed.

115. **Postoperative Psychoses.**—Kelly maintains that postoperative psychoses seen often in childhood and the aged, occur also in women in the prime of life, most frequently between the ages of 35 and 45. Anesthesia, physical shock, the kind or severity of the operation are not effective causative agents. Infection, autointoxication, drug intoxication are important factors, but there are many psychoses entirely independent of them. Mild aberrations of a transitory nature are very common. An unstable nervous system, and especially undue anxiety and worry about the operation are the most potent factors in bringing about profound nervous sequelæ. Prognosis is favorable. Prophylaxis consists in quieting and reassuring the patient. In this connection the nurse is most important. Care should be taken to avoid any legal or forensic complications by frankly dealing with the family from the onset of the trouble.

117. **Malignant Leiomyoma of the Uterus.**—Myer records a case which seems to fulfill all essential requirements from both the clinical and pathologic standpoint.

118. **Tuberculosis of the Peritoneum.**—The apparent difference in the incidence of peritoneal tuberculosis in the male and female, Allport believes is apparent rather than real, and such difference as exists is due altogether to the inclusion of the female organs within the peritoneal cavity. The apparent differences in the form of peritoneal tuberculosis are due: (1) to differences in the location and structure of the organs involved; (2) to a recognition of the disease at various stages in its development. Pathologically, the disease has but one form, which unfolds itself along the same morphologic lines as in other parts of the body. Peritoneal tuberculosis is never primary. The most common avenue of entrance is the bowel; next, the lymph glands; next the female genitals. Bowel infection may be secondary to that of the peritoneum, and the female genitals may receive infection in the same retrograde manner. Gravity plays an important part in the spread of intraperitoneal tuberculosis. The same is true of diffusion by contact and continuity.

Temperature of a markedly febrile character is an indication of mixed infection; especially true is this of remittent fever. High leucocytosis and temperature following operative interference are favorable conditions, and indicate good resistance of the individual to the farther progress of the disease. In abdominal operations followed by prolonged fever and delayed convalescence, the possibility of existence of hitherto unsuspected tuberculosis should be borne in mind by the operator. All specimens removed at abdominal operations should be thoroughly inspected for tuberculosis. The theory that ascitic fluid has a protective, curative, opsonic, or otherwise salutary function is incapable of proof. In all cases in which recovery takes place, healing occurs after the resorption of the fluid and through the agency of active hyperemia and adhesions; the adhesion is the force which, here as elsewhere, delimits and excludes the morbid process from becoming a farther power for evil. Statistics, approved by the best modern opinions, show that simple incision with thorough evacuation of the fluid without drainage, increases by a very appreciable percentage the uncertainty and rapidity with which climate, hygiene and diet can effect a permanent cure.

Radical operations, such as curettage, erasion, resection, continued drainage—beneficial in joint surgery—should have no place, except as emergency measures, in dealing with the intraperitoneal lesions of tuberculosis. Drainage, he says, is a "snare of the devil" and is especially apt to be followed by serious and often fatal fecal fistula in the dry forms of tuberculous peritonitis. Statistics show conclusively, he asserts, that its practice leads to evils which are worse than the original disease.

119. **Rupture of Pyosalpinx.**—Bonney reports one personal case and reviews 44 cases recorded in the literature.

123. **Treatment of Diffuse Septic Peritonitis.**—Of the series of 167 cases of diffuse septic peritonitis from appendicitis operated on by Fowler at varying intervals following perforation, up to January, 1909, there have been but fifteen patients operated on within twenty-four hours of the onset. This series does not include any patient operated on for perforation of the appendix within a few hours of the perforation, in which event one finds an appendix congested to a variable degree, free or slightly adherent, a perforation usually in the distal half, with or without the escape of an enterolith, seropurulent fluid, malodorous or not, according to the germ present, moderate in amount and not under tension, a peritoneum which only in the neighborhood of the appendix showed slight change, perhaps hardly any injection of the peritoneal surface. Of such cases Fowler has operated on over 100 patients with no deaths.

Of the 15 patients with diffuse septic peritonitis, 9 were males, 6 were females; 4 were between the ages of 10 to 15; 6 were 15 to 20; 1, 20 to 25; 1, 25 to 30; 2, 30 to 35; 1, 35 to 40; 11 had had no previous attacks; 3, one previous attack; 1, three previous attacks; 15 were twenty-four hours in present attack when operated on; 15 were operated on by an oblique incision; 15 showed free pus under tension when the peritoneum was incised; in 13 the appendix was free, gangrenous and perforated; in 2, it was slightly adherent, gangrenous and perforated; in 14, the appendix was removed in the typical manner, and the stump inverted; in 1, the base was ligated; in 7, the peritoneal cavity was flushed with saline, in 3, with peroxid followed by saline; in 5, no irrigation was used; in 15 cases laparotomy sponges were used to keep back the intestines while removing the appendix; in every case these sponges, when removed were saturated with a purulent material and fibrinous exudate; in 7 cases a glass tube into the pelvis was used for drainage; in 1 case a rubber tube; in 3 cases wicking or gauze to the site of the appendix; in 2, vaginal drainage; in 2, no drainage; the average duration of operation was twelve minutes; in 15 cases the elevated head and trunk posture was employed; 13 patients were given fluids immediately on recovering from anesthesia; 2 were given nothing by mouth for twenty-four hours; 8 received saline enemata every four hours for four doses; 6 nothing by rectum; 1, Murphy irrigation. Average stay in the hospital twenty-eight days. All cases recovered.

Fowler concludes that patients with diffuse septic peritonitis from appendicitis operated on within twenty-four hours of the onset of the disease, i. e., before the peritoneum is infiltrated, recover, providing the primary focus is removed quickly without damaging the absorbing power of the peritoneum, irrespective of feeding or enemas, providing the absorbing power of the peritoneum is properly made use of.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

November 6

1 *Darwinism and Medicine. J. A. Lindsay.
2 Identity of British Ulcerative Colitis and Tropical Bacillary Dysentery. H. P. Hawkins.
3 The Alleged Heterogenesis in Ankylostoma Duodenale. R. T. Leiper.
4 Oriental Sore. R. M. Carter.
5 *Tuberculosis in Bombay. R. Row.
6 *Tuberculin Reactions in Skin and Eye. C. McNeil.
7 Disseminated Tuberculosis Treated with Marmorek's Serum. H. Hemsted.
8 Bacteriology and Vaccine Treatment of Common Colds. C. H. Benham.

1. **Darwinism and Medicine.**—That a general survey of the relation of Darwinism to the science and art of medicine is likely, in many ways to be salutary, is the belief of Lindsay. He says that it will certainly tend to breadth of view, to a philosophic appraisement of the factors with which we have

to deal, to a recognition of the great underlying laws and secular processes which are related to our art. It may, perhaps, act as a damper on enthusiasm when it is realized that evolutionary change is slow and only partially under control; but, if this be the truth, it is better to know and recognize it. Medicine will gain in stability and in influence, as well as in dignity, by being in close relation with the higher thought of the day. In some not unimportant particulars it may react on that thought. Disease becomes something more than a disagreeable and embarrassing fact when we realize how closely it is related to evolutionary processes, how vivid is the light it is capable of throwing on evolutionary law. It takes its place—temporary we may hope—in the eternal order.

5. **Tubercle in Bombay.**—From a number of observations of cases of phthisis under his own care for the last ten years, Row claims that when a patient shows any improvement, side by side with his clinical progress, one finds in his sputum characteristic changes in the tubercle bacilli, especially in the grouping, and making allowances for all the fallacies connected with the technic of preparing the specimens under exactly identical conditions, one cannot resist being struck with the constancy of these changes, which, stated in brief, are:

1. Characteristic grouping of the tubercle bacillus—instead of being diffuse and scattered, or at best in twos and threes, they group in masses of eight, ten, twelve or more bacilli, scattered here and there in the specimen coming under focus as the search is proceeded with—in addition to the singles, twos and threes, which appear to be fewer. 2. A gradual diminution of the number of the bacilli found in the sputum. 3. A morphologic change of the individual bacilli—the individual rods, which were at first solid, show more beading, erosion of edges, and thinning—an appearance of distinct degenerative change in the bacilli. 4. A very great diminution of even these degenerate bacilli, so that one observes a few granules here and there indicative of some bacilli or their products. 5. Loss of their virulence, as no result is obtained by inoculation experiments. Thus it appears that in the course of infection there is always a certain phase when agglutinins make their appearance, and these agglutinins are manifested by the groupings above referred to, and, *a priori*, Row was led to suspect the possible presence of these bodies or allied bodies in the tuberculous sputum, in the spleen, and the liver, where the partial caseating necrotic masses were so prominently noticed in guinea-pigs. The splenic and hepatic lesions above referred to appear to be formed as though by selection, the whole defensive machinery of the guinea-pigs being brought into activity mainly in these organs, where the poison and its reaction products, so to say, become concentrated during the course of infection. These considerations have led Row to attempt to isolate from these foci a material which, when acted on by blood serum of undoubtedly tuberculous patients, would in all probability demonstrate the presence of agglutinins. With this object in view, extracts were obtained (1) from tuberculous sputum, (2) caseating glands, (3) necrotic and partially caseous livers, and (4) caseating spleens of guinea-pigs; and from the large number of chemicals tried alcohol has been selected as being the best reagent for the purpose. After a series of trials, the extracts of the first three classes were rejected as being unsuited for the purpose in view, because a large admixture of substance other than the active body in question are taken up by the spirit, and these other bodies, especially fats, extractives, and possibly traces of albumose interfere with the reaction; caseating spleens afford the best extract, especially those spleens which show a maximum of caseating material and a minimum of true splenic structure. Although the general result of the serum reaction in cases of tubercle is positive, yet when using the splenic extract, Row has tested the value of the reaction by its giving negative results with malaria, enteric infection, dysentery, meningitis, bronchitis, and a few other septic conditions. Fuller details and the important bearings of these actions in the study of allied diseases are reserved for a further communication.

6. **Tuberculin Reactions in Skin and Eye.**—A series of 153 cases were tested by McNeil as to the skin reaction in the group of diseases of bone, lymphatic glands and joints. The reactions were very clear, either emphatically positive or negative. A large proportion of the cases of enlarged or suppurating neck glands gave positive reactions. The test was of great value in obscure joint conditions where the clinical diagnosis was doubtful, and especially in cases of slight but persistent joint disablement after injury. Perhaps the most significant group is that of the simple pleural effusions. Thirteen out of 14 cases gave a positive reaction. Of the cases of tuberculous peritonitis, three failed to react. They were all severe cases with great general prostration, and two of them have already proved fatal. The groups of tuberculous meningitis and general tuberculosis illustrate well how in very severe or general infections the test, like the ocular reaction, breaks down. Of the skin conditions, two were clinically tuberculous—lupus and tuberculous ulceration—and gave positive reactions. The remaining negative results were in cases of eczema. Numerous control cases taken from cases of lobar pneumonia, empyema, chorea, and other miscellaneous conditions, were all negative, with one exception.

In 78 cases the Calmette and v. Pirquet reactions were tried in the same patient. The v. Pirquet test was positive in 31 cases, it was negative in 47. In these 47 negatives the Calmette reaction was also negative in every case. It was positive in 21 of the cases in which the v. Pirquet was positive, but it failed to react in the remaining 10 cases in which v. Pirquet was positive. That is to say, out of a total of 78 cases, the Calmette test either coincided with the v. Pirquet, or contradicted it negatively. It did not contradict positively in a single case—that is, it never gave a positive reaction where the v. Pirquet was negative.

Lancet, London

November 6

9 *Darwinism and Medicine. J. A. Lindsay.
10 *Oxaluria and the Treatment of Calcium Oxalate Deposit from the Urine. R. Maguire.
11 Late Traumatic Subdural Hemorrhage: Traumatic Late Apoplexy. A. H. Miller.
12 *Starch Indigestion in Babies. E. Cautley.
13 *Lung Puncture. T. J. Horder.
14 *The Dyspepsia of Old Age. W. S. Fenwick.
15 Sinusitis Complication of Influenza.
16 Tertiary S Death from Abductor Paralysis of Vocal Cords. R. H. J. Browne.
17 Rapid Recovery in a Case of Trophoneurotic Anemia by Intramuscular Injection of Sodium Para-Aminophenylarsonate. T. W. Parry.

9. See Abstract No. 1.

10. **Oxaluria.**—Maguire is convinced that he succeeded in dissolving an oxalate calculus while existent in the higher urinary passages of a patient, and with removal of all the consequent symptoms. The patient, aged 44, passed through a period of great overwork, anxiety, and sleeplessness, and in consequence suffered from what he called "nervous dyspepsia." A year later, he placed himself under the care of a physician, who treated his dyspepsia, and later discovered a pronounced oxaluria—then, it is said, in the form of a dumbbell deposit. Subsequent hematuria and severe pain in the right flank, extending to the right testicle, made it probable that a calculus had formed in the upper urinary passages of the right side, but several *x*-ray examinations failed to demonstrate this. The patient was advised to take alkaline waters and a diet mostly composed of vegetables. Toward the end of three weeks he passed a small stone which proved to be composed of oxalate of calcium, but his local symptoms were in no way relieved, his dyspepsia persisted and his general weakness, ill-health and loss of weight had increased.

It was then that Maguire saw the man. He made a diagnosis of (a) oxaluria from excessive production of calcium oxalate, this in turn being the result of disordered metabolism caused by the dyspepsia; and (b) an oxalate of calcium calculus, lodged in the right ureter. He prescribed absolute rest, as nearly as possible in the open air, with a liberal diet of white meat, two or three times a week, a little champagne, and a medicinal course of dilute nitric acid and strychnin with digestive ferments at the beginning of each meal. An aloes and nux vomica pill each night and a dose of Carlsbad salts once a week were ordered to regulate the bowels. The symptoms, apart from those of calculus, very soon lessened in severity. The symptoms of stone, however, were as severe as before. It therefore seemed to Maguire feasible that if one could increase the acid phosphate of sodium in the urine by giving large quantities of the salt by the mouth, one might possibly at least dissolve off some of the spikes of the oxalate calculus and so facilitate its passage. Maguire then ordered, at first, half an ounce, then one ounce, and very soon two ounces of acid phosphate of soda, to be dissolvel in 100 ounces of distilled water and the solution drunk at frequent intervals during the twenty-four hours, but, so far as possible, remote from meal times. For half an hour or so after each dose there was considerable uneasiness in the abdomen, mostly from flatulence and a feeling of distention, but a little essence of ginger added to the solution relieved this to some extent, and it was never unbearable considering the end in view. The acidity of the urine increased about half an hour after taking each dose and the small amount of calcium oxalate still being deposited seemed always to be diminished in the urine passed at this time. The oxalate deposit disappeared entirely in about ten days. The blood in the urine gradually diminished and disappeared in about three weeks. The pain lessened gradually, but in six weeks there was no sign or symptom of stone; the patient could walk from ten to twelve miles and take severe gymnastic exercise without the slightest discomfort, nothing abnormal could be detected by the rectum, and the man felt well and in his usual spirits.

12. **Starch Digestion in Babies.**—A diastasic ferment is secreted by the salivary glands and pancreas of new-born infants and even before birth. Its amount and activity are slight in the first few weeks of life and after that rapidly increase. The glands, notably the pancreas, can be trained by means of a starch diet to the secretion of an increased amount of the amylolytic ferment. There is no inherent reason why this training should not be begun shortly after birth in the case of the bottle-fed infants instead of waiting until the child has attained the age of six months, as so commonly advised on purely theoretical grounds. Practical experience has shown that the usual barley water contains about 2 per cent. of starch. If mixed with an equal quantity of milk there will be only 1 per cent. of starch in the mixture. Such an amount is non-injurious and almost certainly is beneficial, as it encourages the growth of lactic acid. These organisms are of undoubted advantage in the prevention of the growth of proteolytic bacteria.

If a starchy food is used in the first two weeks of life it is advisable to begin with a milk mixture which will not contain more than 0.5 per cent. of starch and to gradually increase the amount as the child grows older. Indeed, at any age when a starchy food is first given it should be in very weak solution and slowly strengthened up to as much as 3 to 5 per cent. If the stools become very acid or if they give a distinct starch reaction, the percentage of starch in the diet must be reduced. Special care must be paid to these considerations in the first two months of life because of the deficiency of salivary secretion. Further investigations may possibly show that this is a point of little importance as the pancreatic secretion may be sufficient in quantity and activity. The evil effects of starch in early life are due to (a) excess; (b) its administration in the form of a more or less insoluble emulsion instead of a soluble food; and (c) the substitution of starch for the necessary protein, fats and salts. In other words, the mischief results from deficiency of necessary proximate principles of diet rather than from the presence of starch.

13. **Lung Puncture.**—In actual practice, a diagnostic puncture of the lung, according to Horder, may be made under two conditions: (1) if a pleural effusion is suspected and the result of the puncture negatives this; or (2) if no fluid is suspected in the pleural sac, but the lung is deliberately punctured for the express purpose of discovering the nature of a disease process within the lung itself. The material obtained is no less valuable in the first than in the second of these two conditions. The indications for lung puncture will vary somewhat with the desire of the physician for accurate knowledge with regard to the condition of the patient. In brief, it may be said that the puncture is indicated: 1. In any case yielding signs of consolidation of the lung, in which careful examination of the sputum fails to reveal the nature of the disease. It is, perhaps, pushing the value of "ocular demonstration" rather far to say that the lung puncture is indicated in a straightforward case of lobar pneumonia, even when there is no sputum for examination. But it should certainly be undertaken in any such case if the desired clinical course is departed from in any way to the prejudice of the patient. The puncture will frequently reveal the existence of a mixed infection (e. g., *B. influenzæ* and pneumococcus) when this is not suspected. 2. In abscess it is useful to obtain a specimen of pus from the actual seat of suppuration, for thereby a knowledge of the causal microbe is gained, often a matter of great difficulty or impossibility when dealing with the sputum. 3. In bronchiectases the same comments holds. The mode of performing the puncture follows exactly that of exploration of the pleura. Horder has punctured the lung for diagnostic purposes in some 14 cases. He suggests that it may possibly be found of service in suspected cases of acute pulmonary tuberculosis, in which condition sputum is so commonly absent.

14. **Dyspepsia of Old Age.**—Fenwick's investigations seem to indicate that out of every 100 cases of chronic dyspepsia in persons over 65 years of age, 66 are secondary to organic diseases of some important organ of the body, while the remaining 34 owe their symptoms to a progressive degeneration of the secretory structures of the stomach and intestines. In the former class the disorder of digestion usually takes the form of a chronic gastritis due to disease of the kidneys, prostate, heart, lungs, liver, pancreas, chronic gout or inefficient mastication, while in about 7 of the 66 cases, or in 10.6 per cent. of the entire number, long-continued hypersecretion, due to chronic ulcer in the vicinity of the pylorus, gall-stones, or diseased appendix is the cause of the constant indigestion.

Medical Press and Circular, London

September 29

18 *Intestinal Obstruction. J. R. Morison.
19 Recurrent Hemoptysis in the Non-Tuberculous. J. Hay.
20 Natural History of the Common Flea. G. Millan.
21 Quacks, False Remedies, and the Public Health (continued). D. Walsh.

October 27

22 Hypertrophy of the Prostate and its Treatment. Professor Pauchet.
23 Six Consecutive Cases of Appendicitis Operated On. S. J. Ross.
24 Need for Legislation in Regard to Anesthetics, and the Lines on Which It Should Take Place. F. W. Hewitt.
25 Quacks, False Remedies, and the Public Health (continued). D. Walsh.

18. **Intestinal Obstruction.**—The first case reported by Morison was one of intestinal obstruction due to a malignant stricture in the splenic flexure of the colon with hypertrophy and distention of the cecum and colon, proximal to the stricture, the contents being actively virulent in consequence of colitis and retention above it. No material benefit followed medical treatment. Following a preliminary cecostomy, half of the transverse and descending colon with a corresponding portion of mesentery was excised with the growth, the ends of the bowel were closed by sutures, and a large lateral anastomosis was established by sutures between the remains of the transverse and descending colon. Fourteen days later, after free irrigation of the colon, the cecostomy opening was closed and twelve days later the patient left the infirmary with his wounds healing and feeling well. The second case was one of acute intestinal obstruction from blocking of the small intestine, with strangulation of a considerable area of the gut. The obstruction was caused by something fixing acutely and kinking the ileum on the outer side of the cecum and ascending colon, and on separating this adhesion pus escaped. After cleaning away the pus, a gangrenous perforated appendix was turned out of the abscess cavity and excised. Recovery was subsequently uninterrupted.

Clinical Journal, London

October 27

26 Lymphadenoma of Mediastinum. W. P. Herringham.
27 Functional Disorders of the Stomach and Intestines: *Their Diagnosis from Organic Disease, and Treatment (concluded).* S. Martin.
28 Use of and Indications for Electrotherapy in Gynaecologic Affections. J. C. Webb

Indian Medical Gazette, Calcutta

October

29 Recent Cholera Outbreak Among the Nurses of the Presidency General Hospital, Calcutta. R. Macrae.
30 Smallpox. J. C. S. Vaughan.
31 Increased Intraocular Tension Encountered in Cases of Epidemic Dropsy. F. P. Maynard.
32 An Indian Screw-worm. R. L. Patterson.

Bulletin de l'Académie de Médecine, Paris

October 19, LXXIII, No. 33, pp. 193-203

33 *Phototherapy of Laryngeal Tuberculosis. A. Nepveu and H. Hallopeau.
34 Two Cases of Congenital Fissure of the Face. (Coloboma facial.) E. Kirmisson.

33. Phototherapy of Laryngeal Tuberculosis.—Nepveu utilizes for the purpose an electric arc light with quartz reflectors and a quartz water-cooling device. He precedes the sitting by spraying the region with a solution of cocain and adrenalin, which diminishes the reflexes and congestion and thus enhances the action of the chemical rays on the tissues.

Presse Médicale, Paris

October 23, XVII, No. 85, pp. 745-752

35 *Tuberculosis of Tendon Sheaths. (La forme hypertrophique [illegible] de la tuberculose des gaines tendineuses.) [illegible] Massabuau.
36 *[illegible] of Hypophysis Tumor in Case of Acromegaly. P. Lecène.
37 Anatomy of the Wrist. (La région cubitale du poignet.) L. Bruandet.

35. Tuberculous Process in Tendon Sheath.—A domestic in a family in which there was a consumptive cut her thumb with a table knife and a process developed in the wrist with specific tuberculous lesions accompanying the connective-tissue reaction of an apparent myeloma. Recent research has demonstrated that a number of connective-tissue reactions, whose structure simulates that of certain tumors, are in reality tuberculous lesions. Gougerot has recently demonstrated this for a lymphadenoma, a lymphosarcoid, a fibroma and a spindle-celled sarcoma, although the bacteriologic proof is still lacking in some.

36. Hypophysis Tumor.—Lecène's patient was a man of 38, presenting the clinical picture of typical acromegaly, with epileptiform manifestations and impaired vision. A tumor was found in the hypophysis and was apparently successfully removed, but sudden fatal collapse occurred on the thirty-sixth day after the transsphenoidal operation.

Semaine Médicale, Paris

October 27, XXIX, No. 43, pp. 505-516

38 *Diagnostic Importance of Albuminuria in Meningeal Hemorrhage. G. Guillain and C. Vincent.

November 3, No. 44, pp. 517-528

39 The Leucocytes in Disease. (Vitalité, résistance et activité des globules blancs dans les maladies.) C. Achard.

38. Albuminuria as Symptom of Meningeal Hemorrhage.—In the case described, a woman of 54 experienced sudden malaise with general chilliness and severe headache, but no loss of consciousness, merely some torpor. In the liter and a half of urine voided during the twenty-four hours, 20 gm. of albumin per liter were found, but there was no tendency to edema or *bruit de galop*, although there was slight fever. Lumbar puncture revealed a typical and abundant meningeal hemorrhage; all the symptoms gradually subsided and by the ninth day there was no trace of albuminuria. In none of the similar cases on record was the amount of albumin over half this proportion. The discovery of large amounts of albumin in the urine without other signs of nephritis may aid in the differentiation of meningeal hemorrhage. In a second case Guillain based the diagnosis on this sign alone, the autopsy confirming it.

Archiv für Verdauungs-Krankheiten, Berlin

October, XV, No. 5, pp. 557-670

40 Influence of New Cholagogs on Secretion of Bile. (Experimentelle Studien über die Beeinflussung der Gallensekretion durch neuere Cholagoga.) F. Eichler and B. Latz.
41 *Deficiency of Hydrochloric Acid in the Stomach. (Statistisches über Salzsäuremangel im Magen.) G. Kelling.
42 Gastric Mucosa Cyst in the Esophagus. (Eine mit Magenschleimhaut versehene Cyste des Oesophagus.) A. Staehelin-Burckhardt.
43 Two Cases of Severe Chronic Enterospasm. R. Rinne.
44 *Vegetarian Diet of Japanese Monks. (Ueber die absolut vegetarische Ernährung japanischer Bonzen.) G. Yukawa.

41. Prevalence of Hypochlorhydria.—Kelling expatiates on the necessity for collecting statistics in regard to the prevalence of conditions in the stomach connected with the absence of free and combined hydrochloric acid, and presents the findings in this respect in 4,937 cases of various stomach affections as his contribution to the subject. The list includes 192 men and 189 women with unquestioned ulcer, and 3,147 with stomach disturbances on a basis of neurasthenia or anemia: 1,729 men with hydrochloric acid and 395 without, and 900 women with and 216 without. Out of the 3,147 in the second group, 16.5 per cent. had no free hydrochloric acid in the stomach after the Ewald-Boas test breakfast—every seventh man and every fifth woman. In the 622 cases of gastric carcinoma, no hydrochloric acid was found in 462, while one in each four had free acid. These findings in regard to the acidity did not seem to be in any way proportional to the size of the cancer. He has encountered only two instances of chronic gastritis with ultimate gastric cancer, and thinks that chronic atrophic gastritis can be said almost to exclude cancer, while a peptic ulcer invites it. In 8 cases of pernicious anemia, none of the patients had free acid, but one had a small gastric carcinoma. These findings have confirmed him in the view that pernicious anemia, like leucemia, belongs in the group of tumor diseases, the essential trouble being a proliferation of erythroblast-forming cells. In 254 cases of gall-stone trouble, 30 per cent. of the patients had no free acid. This frequent lack of acid with gall-stones throws light on the cases in which lactic acid is found but no cancer. The lack of hydrochloric acid and the stagnation of stomach content favor the production of lactic acid as the duodenum is compressed by inflammatory processes around the gall-bladder. In 36 cases of gout and kidney stones, no free acid was detected in 33 per cent., and none in 38 per cent. of 21 diabetics, in 40 per cent. of 195 cases of tuberculosis and in 22 per cent. of 119 cases of typical migraine. Hydrochloric acid was found in all but 3 of 21 cases of mild chronic nephritis, and in all but 12 of 60 cases of old syphilitic infection. No special influence from helminths was discernible except with tenia, the figures showing a slightly larger proportion of hypochlorhydria among those who had had a tenia; it is possible, he suggests, that subacidity predisposes to lodgment of a tenia. The above data seem to indicate that in certain infectious diseases, such as tuberculosis, in cancer and in metabolic affections, certain toxins circulating in the blood have an injurious action on the glands of the stomach, which also seems to be the case with gall-stone disturbances. In regard to neurasthenic hypochlorhydria, he is inclined to accept the nervous weakness as responsible for the stomach disturbances by the resulting disturbances in molecular change and the consequent abnormal metabolic products. It is noteworthy that many of these patients suffer most from their stomach when they are especially fatigued. It is possible that the fatigue products circulating in the blood irritate the glands of the stomach. The irritation stimulates a healthy gland to increased functioning and hypertrophy, but it injures and finally destroys a congenitally weak gland. Hyperacidity and hypoacidity may thus proceed from the same cause, and the former may blend into the latter as the glands become exhausted. Many of these patients with hypoacidity are benefited by sodium, probably from suggestion, as they remember former days when sodium bicarbonate did relieve. These cases confirm the saying that gastric achylia cannot be diagnosed from the patient's complaints; the stomach contents must be directly examined. He was unable to discover any characteristic nervous symptoms for congenital weakness of the glands of the stomach. Collection of regional statistics in regard to hypochlorhydria may throw more light on the subject. He remarks that the only contraindications to the use of the stomach tube are aneurism of the aorta, extensive gastric hemorrhage less than three weeks before, and varices in the esophagus such as frequently accompany cirrhosis of the liver. These varices bleed readily, and consequently he never introduces the stomach tube without previously carefully investigating the heart and liver.

44. Vegetarian Diet of Japanese Monks.—Yukawa gives sixty-five tables of the various metabolic findings in a number of Japanese vegetarians, especially 12 monks who abstain from a flesh diet in any form. Over 46 per cent. of 200 elderly persons examined were found to have subsisted for decades and were apparently thriving on an exclusively vegetable diet, mainly rice. The average Japanese diet in the groups of farmers examined represented 2,877 calories or 55.6 calories per kilogram. The 12 priests, the subjects of the special metabolic research, had been living a cloistered life for from 15 to 55 years. Their diet represented merely 1,766 calories or 36.92 calories per kilogram. All were healthy and strong.

Berliner klinische Wochenschrift

October 18, XLVI, No. 42, pp. 1877-1920

45 Negative or Unfavorable Results of Antiferment Treatment of Acute Suppurations in Infants. (Antifermentbehandlung eitriger Prozesse beim Säugling.) M. Klotz.
46 Proteolytic Ferments in Infants' Stools. (Proteolytische Fermente in den Säuglingsfäces.) F. Czekkel.
47 Regeneration of the Suprarenals. (Regeneration der Nebenniere.) A. Carraro and E. Kuznitsky.
48 Nature of Serum Antitrypsin. K. Meyer.
49 *Transillumination of Fundus of Eye by Way of the Throat, etc. (Zum Einblick in das Innere des Auges bei getrübten brechenden Medien.) C. Hertzell.
50 *Painful Cystitis. (Cystitis Dolorosa.) C. Posner.

October 25, No. 43, pp. 1921-1964

51 *Emotional Injury from Horror as Industrial Accident. (Furcht und Grauen als Unfallursache.) L. Lewin.
52 Tuberculosis in Children and Immunity. (Kindheits-Tuberkulose und Immunität.) Ritter and Vehling.
53 *Adrenalin as An [illegible] L. Jvcovic.
54 Alleged Perfect [illegible] thout Preliminary Wasl [illegible] der Haut bei chirurgisci [illegible]
55 Diagnosis and Treatment of Incipient Tuberculosis. A. v. Sokolowski. Commenced in No. 42.

49. **Transillumination of Eye by Way of the Throat.**—Hertzell says that when there is any tendency to opacity in the lens it is difficult to inspect the fundus of the eye from without, but, with the light at the back, a clear oversight is obtained. The difference is as great as between trying to look from the street through a lace curtain into a room during the day and at night after the room is lighted up.

50. **Painful Cystitis.**—Posner declares that there is generally ulceration in every case of painful cystitis, the conditions in many cases being remarkably like those of round gastric ulcer. The pain in the majority of cases is due to ulcer, tuberculosis or tumor, and treatment varies for each. In the tuberculous form, a primary kidney process is probably the source of the bladder trouble, but whether this is the case or not, general measures should be instituted, including prudent general tuberculin treatment. There is no form of local treatment of a tuberculous bladder process that does not aggravate the disturbances. In the painful variety, the bladder will not tolerate even the ordinary technic of copious irrigation. The organ is actually a contracted bladder by this time, and has a capacity of only a few cubic centimeters. A cystitis which becomes aggravated under treatment with silver nitrate, instead of showing a change for the better, is strongly suggestive of tuberculosis. Corrosive sublimate may have a favorable action and use of small amounts of a 6 per cent. solution of carbolic acid have been recommended by Rovsing and is justifiable as a last resource. A mere incision into the bladder may have a favorable influence in some cases. The conditions for treatment are a little better with non-tuberculous ulceration; silver nitrate instillations may induce a complete cure if applied directly to the lesion with the aid of the cystoscope. Radical removal of the ulceration may be considered unless the lesion has progressed to an actual contracted kidney. In case of inoperable tumor, relief may be obtained sometimes from injection into the bladder of warm olive oil. If mineral waters are permitted they should be restricted to small amounts. Physical and dietetic measures are of the utmost importance, especially local application of heat, long sitz baths and avoidance of condiments. Milk is the best beverage; it may be evaporated to half its volume to prevent too much diuretic action. Although bed rest is favorable, its advantages are usually counterbalanced by those of out-door freedom, eventually with the use of a urinal, and Posner pleads for technical improvement of the urinals in vogue as they have too many drawbacks at present.

51. **Horror as Cause of Industrial Accident.**—A miner was ordered to disinfect with lysol the putrefying corpse of a mate who had been crushed in the mine a few days before. The miner developed thereafter a condition of mental depression incapacitating him for work.

53. **Adrenalin an Antidote to Strychnin.**—In this communication from von Noorden's clinic at Vienna, Falta reports experimental research on guinea-pigs and rabbits in which injection of adrenalin seemed to neutralize completely several times the fatal dose of strychnin. This occurs whether the adrenalin and strychnin are mixed and injected together or injected at different points of the body, only in the latter case the adrenalin should be injected a minute before the other. The experiments on frogs demonstrated that the action of adrenalin as an antidote is not due to delay in absorption, but seems to be a biologic process of different nature. Experiments are now under way to determine whether it possesses the same powerful action as an antidote in respect to diphtheria and other toxins.

Correspondenz-Blatt für Schweizer Aerzte, Basle

October 15, XLIX, No. 20, pp. 689-720

56 *End-Results of Nephrectomy in 100 Cases. (Ergebnisse einer Serie von 100 Nephrektomien.) H. Wildbolz.
57 Antiferment Treatment of Acute Suppurations. (Antifermentbehandlung akut eitriger Prozesse.) S. Stocker.

56. **Experiences with Nephrectomy.**—The kidney was removed on account of tuberculosis in 90 of the 100 nephrectomies reported by Widbolz. Once convinced of the integrity of the other kidney, he did not hesitate to remove the tuberculous organ even when the general condition was extremely bad, and the results were favorable. His mortality was 4 per cent., but only two of the chachectic patients succumbed, one to advanced myocarditis and the other to uremia, as the other kidney was involved in the tuberculous process; the contracted condition of the bladder had rendered functional tests impossible. Another patient succumbed to pulmonary embolism ten days after the nephrectomy, and a thrombus was found in the renal artery. The only other fatality was in a patient with paralytic ileus a week after nephrectomy for hypernephroma. The paralysis of the bowel may have been due to local trauma of the adjacent colon or to injury of the bowel from the pressure of the hard cushion pushed under the patient to raise the field of operation. He noticed that postoperative meteorism was more frequent when the patients had been purged with a single large dose of castor oil than when smaller amounts of some milder purgative had been given for three days before. He uses ether anesthesia. The ordinary iodoform application after an operation on the tuberculous knee in two patients with a simultaneous tuberculous process in one or both kidneys caused such disturbances that the patients rapidly succumbed to iodoform intoxication, although only a comparatively small amount of iodoform had been used. He has never had a mishap from trusting too implicitly to devices for intravesical segregation of the urine, but states that he knows of a neighboring surgeon who had four mishaps in one year from this cause. In two of the cases the mistake was not discovered until after the sound kidney instead of the diseased one had been removed. In the two other cases the kidney was incised before the contemplated removal, showing the mistake, and the other kidney was then removed with no further damage except the entirely useless incision in the sound organ. In one of Wildbolz' cases intravesical segregation had never given decisive information as to whether the evident renal tuberculosis was unilateral or bilateral. After eight years of the trouble, catheterization of the ureters showed that the process was confined to one kidney and nephrectomy was followed by complete recovery. As a rule the tuberculous process in the kidney causes no disturbance until the bladder becomes involved, but occasionally the kidney process may simulate colic from renal calculi. In two cases in his experience a tuberculous process in one kidney was associated with calculi in the other, the patients recovering after nephrectomy and pyelotomy of the remaining kidney. The tuberculous kidney process may also attract attention by symptoms suggesting appendicitis when the right kidney is involved. One of his cases is peculiarly instructive: For ten years the patient had suffered from frequent colic in the right kidney region; then catheterization of the ureters disclosed pyonephrosis of the left kidney, the right being

apparently normal. No tubercle bacilli were found. After removal of the diseased left kidney, found totally degenerated and with two stones in the pelvis, all disturbances ceased, including the right colics and the gastrointestinal disturbances which had persisted for years. In another case a kidney was found totally destroyed by a tuberculous process which had caused no disturbances whatever, the tumefied kidney being a casual discovery when the patient consulted a physician on account of sterility.

Deutsche medizinische Wochenschrift, Berlin

October 28, XXXV, No. 43, pp. 1865-1904

58 Allowing Patients to Get Up Early. (Weitere Erfahrungen [illegible] Laparotomierter zur Sicherung [illegible]ihrens.) H. Kümmell.
59 [illegible] Human Blood Serum for Diag[illegible]eutung des Antitrypsingehaltes [illegible] G. Jochmann.
60 [illegible] Infant Feeding. (Serologische [illegible] der Säuglingsernährung.) C.
61 [illegible] Findings with Palpation and [illegible] Blutdruckmessungen mittels der palpatorischen und auskultatorischen Methode.) P. Sterzing.
62 Detachment of Rectum in Fracture of Pelvis. (Ausreissung des Mastdarms bei Beckenringfrakturen.) P. Harrass.
63 Incarcerated Epigastric Hernia without Protrusion. (Zur Lehre von der Hernia lineae albae incarcerata.) M. Sebba.
64 *Facilitation of Childbirth by Non-Operative Measures. (Ueber Erleichterung der Geburt durch nicht operative Verfahren.) M. Samuel.
65 Double Vagina and Uterus. (Verdoppelung des Uterovaginalkanales mit Atresie und Pyokolpos der rechten Scheide.) Durlacher.

64. Non-Operative Measures to Facilitate Childbirth.—Samuel expatiates on the importance of various measures which may permit delivery without the necessity for operative intervention, otherwise apparently imperative. Besides the Walcher posture, which often proves effectual in enlarging the pelvic inlet, he advocates a position which enlarges the outlet and thus frequently renders operative delivery unnecessary. The woman squats, but the squatting is not symmetrical; the two thighs do not press equally on the abdomen. The woman sits almost on one heel, the foot resting on its toes, while the other foot is flat on the floor, both thighs being flexed and both knees. The hands clasp the knees, permitting a firm support to aid in straining. This position, he says, was recommended by A. F. A. King to correct transverse presentation by the thigh pressure on the abdomen. The thigh of the posterior foot presses low down on the head, forcing it from the iliac fossa into the pelvic brim, while the other thigh presses high up on the breech end of the fetus. (See The Journal, May 25, 1908, page 1809.) Samuel has found that this squatting posture has further a most effectual influence in enlarging the outlet of the pelvis while it contracts the inlet, and is thus a valuable aid to delivery when the head or breech is low in the pelvis. It not only enlarges the outlet but renders it possible for the woman to take better advantage of the labor contractions, while it has the additional effect of greatly reducing the pains of labor. When the head is low down the Kristeller manipulation may also prove useful; that is, pushing the head along over the floor of the pelvis during a labor contraction, with both hands on the fundus. Not until these measures have failed should operative intervention be considered. King states that if the woman is unable to squat, the thigh pressure on the abdomen can be obtained by manipulating the legs, artificially flexing the thighs in the position as if the patient were squatting.

Medizinische Klinik, Berlin

October 17, V, No. 42, pp. 1579-1616

66 Pathogenesis and Treatment of Eclampsia. P. Baumm.
67 Operative Treatment of Xerosis of the Corneal Conjunctiva. Libansky.
68 Blue Arc-Light in Surgery. (Therapeutische Verwendung des blauen Bogenlichtes, bes. in der Chirurgie.) E. Moser.
69 Autolytic Processes in Tumors. F. Blumenthal, E. Jacoby and C. Neuberg.

October 24, No. 43, pp. 1617-1652

70 *Laryngeal Catarrh. (Der sogenaunte und der wirkliche [illegible] Fein.
71 [illegible] Papillæ. (Bedeutung der "Papillen" [illegible] A. Buschke.
72 [illegible] of the Injured in Industrial Accidents. [illegible] Therapie Unfallverletzter.) A. Bum.
73 * [illegible] Achylia. W. Jungerich.

70. Treatment of Laryngeal Catarrh.—Fein remarks that there is scarcely any other medical term which is so persistently misused as "laryngeal catarrh." Every sensation, hoarseness, increased secretion, etc., in the throat and an abnormal condition anywhere in the neck is called laryngeal catarrh and treated as such or borne with resignation as "catarrh" is popularly supposed to be incurable. It is often forgotten that the throat is the passageway for the secretions from the lungs, bronchi and trachea, and for the secretions from the nose, as also for the gases and fluids from the stomach. He reviews the different conditions from these various causes which are accepted as manifestations of laryngeal catarrh when in reality the source is remote. When the affection is demonstrated to be actually an acute catarrhal condition in the rear wall of the throat, if the symptoms are annoying scraps of ice may be placed on the back of the tongue, not swallowed. Hard and highly seasoned food should be avoided and the patient may sip occasionally a little tepid mucilaginous fluid. The throat may be sprayed with an emulsion of liquid petrolatum and acacia, to which a few drops of turpentine, eucalyptus or peppermint oil may be added with a little cocain or cherry laurel water in case there is much pain. As patients have so much confidence in gargles, he orders a 1 per cent. solution of potassium chlorate, with a wet compress around the neck at night, but for acute conditions denounces mechanical measures of any kind, especially the use of the camel's hair brush. In chronic catarrh the differentiation must be left to the specialist, but, once differentiated, the general practitioner can, as a rule, continue the treatment ordered.

73. Gastric Achylia and Cancer.—Jungerich presents evidence to show that there does not seem to be any connection between gastric achylia and cancer; the fear that the former prepares the soil for the latter is unfounded according to present testimony. In his own experience he has had thirty-two patients over the age of 40 with gastric achylia since 1899, some of them with a history of achylia for from twelve to thirty years, and yet cancer is not known except in two patients who succumbed to a cancer in the pancreas or sigmoid flexure. The other patients are still in comparatively good health and weight, the appetite good when the dietetic regulations are observed. He has also investigated the previous history in 50 cancer cases, all in private practice, and was unable to find any evidence speaking for the existence of gastric achylia before the first signs of the cancer became apparent. The malignant disease proved fatal in one or at most in two years. He presents in tabulated form the details of his group of 32 achylia patients who have been in his care at any time since 1899.

Münchener medizinische Wochenschrift

October 19, LVI, No. 42, pp. 2146-2200

74 *Visc[illegible] Albumin Content of Child's Blood. ([illegible] und Eiweissgehalt des kindlichen B[illegible]
75 Radium Treatment of Cancer. (Radiumbehandlung der Bösartigen Geschwülste.) A. Caan.
76 *Tendency to Thrombosis: "Thrombophilia," and Allowing Patients to Get Up Early after Childbirth and Laparotomies. (Ueber "Thrombophilie" und das Frühaufstehen Wöchnerinnen und Laparotomierten.) F. Mendel.
77 Influence on Heart Action of Four-cell Electric Baths. (Einfluss der sinusoidalen Vierzellenbäder auf die Herzarbeit.) E Veiel.
78 *General Anesthesia with Dammed Circulation. (Erfahrungen mit Narkosen bei künstlich verkleinertem Kreislauf.) K. Hörmann
79 Special Muscular Connection Between Superior Vena Cava and Bundle of His. C. Thorel.
80 *Nephritis. (Aus dem Gebiete der Nephritis.) L. Casper.
81 Graphic Meth[illegible] art Sounds. (Uebersicht über die [illegible] zur Registrierung der Herztöne.)
82 *Case of Pregnancy Blindness. (Amaurose in der Schwangerschaft.) K. Himmelheber.
83 Aneurism and Murmurs in Pulmonary Artery. F. Reiche.

74. The Viscosity of the Blood.—Trumpp has been making a special study of the viscosity and proportion of hemoglobin and albumin in the blood of children. He examined the blood of 152 children and 7 parturients and of numerous animals in the slaughter-house. His article is a contribution to the infant science of "viscosimetry," which he thinks is destined to prove an important aid for diagnosis and prognosis and possibly a guide to treatment in certain affections. It is evidently an important factor in the solution of many scientific questions. The blood showed most viscosity in a new-born infant in blue asphyxia, 12; the lowest figures, 2.1, in a child with splenic anemia. The unusually high viscosity in the acute stage of alimentary intoxication attracted attention, the figures representing the viscosity growing smaller as the trouble was corrected. These findings confirm the concentration of the blood in alimentary intoxication which Reiss determined by the refractometer. The average viscosity of the blood in children is about 3.65; in infants from 3.2 to 3.6, and in healthy children between 7 and 13, the average is between 3.5 and 4.1. The average in adults, according to Hess, is 4.5. There did not seem to be any connection between the viscosity and the proportion of hemoglobin, but carbon dioxid increased the viscosity.

76. **Prevention of Postoperative Thrombosis.**—Mendel applies the term "thrombophilia" to a predisposition to formation of thrombi which some patients seem to display—the exact reverse of hemophilia. In one such case in his experience a previously healthy woman had phlebitis during the puerperium and since then has developed thrombophlebitis with every intercurrent infection since, once during influenza and once with simple tonsillitis. A tendency to eczema seems to accompany this thrombophilia. In another case thrombosis developed after a trauma of the foot and recurred during attacks of influenza and also in the inferior mesenteric vein during a catarrhal affection of the large intestine. After subsidence of the colics the stool contained traces of blood for weeks, but there were no objective findings otherwise except tenderness of the entire colon. The patient recovered gradually, but only 6 of the 60 similar cases on record terminated in recovery. The integrity of the heart and large vessels confirmed the non-existence of an embolus; the favorable outcome was probably due to the fact that the inferior instead of the superior mesenteric vein had been involved. These and other cases in his experience confirm the assumption of an infectious process in the wall as an indispensable factor in thrombosis. The thrombosis in these cases has generally been accepted as a casual complication of traumatic inflammation, but Mendel regards it as a sign of abnormal constitution of the blood which reacts to any local or general infection with the formation of thrombi. Interference with the circulation does not seem to be much of a factor in the thrombosis, but at the same time the limb should be raised to prevent extension of the process. Allowing patients to get up early after laparotomy or delivery will not prevent the development of thrombi in a predisposed venous system. No proof has been offered to date that thrombosis and embolism are less frequent when the patients are allowed to get up early. On the other hand, it must predispose to embolism especially when there is a tendency to abnormally rapid coagulation in the blood.

78. **General Anesthesia with Part of the Circulation Shut Off.**—Hörmann reports experiences with Klapp's method of damming the circulation described in The Journal, Oct. 19, 1907, p. 1408. Hörmann has applied this method in 50 cases. Much less of the anesthetic is required, he asserts; the patient rouses rapidly, while the blood that has been shut off, when released, serves as a fresh supply which stimulates the nerve-centers, warding off asphyxia by this autotransfusion in case of impending paralysis of the respiratory center. The only contraindications are varicose veins and arteriosclerosis. No by-effects were observed and the technic is the simplest possible, the aim is to shut off from the general circulation the blood already in the limbs. This is done by applying an Esmarch bandage just before the anesthesia is given. Only the amount of blood normally in the limb is thus dammed, without congestion or expulsion of any of it. The bandage must shut off the circulation completely. (The Journal mentioned experimental research confirming the theoretic and clinical data on which the method is based: Nov. 21, 1908, p. 1826, and Jan. 2, 1909, p. 84.) Hörmann compares in three tables the consumption of chloroform and ether in several series of operations showing that with the circulation thus sequestrated only about half as much of the chloroform was required as without it. He always makes a subcutaneous injection of 0.01 gm. morphin one hour before the operation. The chief advantage of the method, however, is that in case of threatening mishap from the anesthesia, by removing the bandage the fresh blood streams back and averts all danger of further trouble. As a rule, only 15 gm. of chloroform were needed, given rapidly at first and then followed with ether, an average of 55 gm. ether being required for major operations.

80. **Nephritis.**—Casper calls attention principally to two special forms of nephritis, a chronic hematuric variety without albumin, tube-casts, edema or other signs of disturbances in the circulation. Hemorrhage in one or the other kidney alternately seems to be the only trouble, the urine in the intervals, which may be months or years, being apparently normal. In the other variety the pathologic changes are so minute sometimes that they escape discovery at autopsy, but a circumscribed nephrosis is responsible for the hemorrhages. This condition is called by the French *"néphrite parcellaire,"* but, Casper asserts, it is certainly not a nephritis. In these cases the hemorrhage occurs always from the same kidney. It is generally more profuse and persistent than the above hematuric nephritis; clots collect in the bladder and may clog the outlet, the kidneys are not palpable or tender and the urine in the intervals is absolutely normal. The apparent similarity between these two affections with their single symptom, hemorrhage, is due only to the fact that the tests for examining the urine in hematuric nephritis have not been sufficiently delicate. More sensitive tests will reveal minute amounts of blood and tube-casts. The prognosis for both affections is good as a rule; it is extremely rare that the hemorrhage is so intense as to require an operation. Pain in the kidney due to nephritis is generally a dull ache, more pronounced after physical exertion and subsiding during rest. But nephritis may at times induce a typical colic though the urine is free from pathologic content. With stone colic red corpuscles are always to be found in it. After the attack has subsided, examination of the urine with sensitive tests (20 per cent. sulpho-salicylic acid), will reveal traces of nephritic albumin and tube-casts. This colic nephritis may be associated with the hematuric nephritis; the colic is the result of sudden edema of the kidney. In conclusion he expatiates on the good prognosis of chronic nephritis in many cases; the kidneys may become contracted in time but not until after several decades, during which the patient feels well. The vascular system, heart and blood-pressure behave as in normal conditions; the albuminuria is often a casual discovery. All this applies especially to the arteriosclerotic kidney; the patients may reach the age that their other vital organs allow. The atrophic process in the kidney corresponds merely to the normal changes with age in the other organs.

82. **Pregnancy Blindness.**—In Himmelheber's case a woman of 34, with chronic nephritis, in the fifth month of her seventh pregnancy developed amaurosis with headache and detachment of the retina on both sides. Abortion was induced and was followed by retrogression of the detachment of the retina, but the atrophy of the optic nerve proved irreparable. The trephining to relieve the pressure on the brain evidently came too late; the pupil reaction was abolished by the second day after the woman had entered the hospital. The case teaches the importance of emptying the uterus and of prompt measures to reduce the intracranial pressure if vision is not promptly restored.

Virchow's Archiv, Berlin

October, CXCVIII, No. 1, pp. 1-192

84 Melanosarcomatosis of Gray and White Horses. (Die Melanosarkomatose der Schimmelpferde.) A. Jaeger.
85 Origin of Melanin Pigment. (Entstehung des Melaninfarbstoffs.) Id.
86 *Changes in Chromaffin System in [illegible] Fatalities of Unexplained Origin. (Veränderu[illegible] bei unaufgeklärten postopera[illegible] Hornowski.
87 Hyalin in [illegible] Appearance, Significance an[illegible] Darm.) Munter.
88 Anatomic [illegible] egacolon in Contrast to [illegible]
89 Chronic Ga[illegible] cystoides.) W. Nowicki.

86. To be reviewed editorially.

Wiener klinische Wochenschrift, Vienna

October 14, XXII, No. 41, pp. 1395-1430

90 Serotherapy of Typhoid. (Zur Frage der ätiologischen Serumtherapie des Typhus abdominalis.) R. Kraus and R. v. Stenitzer.
91 *Treatment of Cholera with R. Kraus' Antitoxic Serum. G. Albanus, W. Kernig and Others.
92 Improved Tuning-Fork Test. (Neue Methoden der Stimmgabelprüfung und der [illegible] rany.
93 Chemistry of Intes [illegible] lon Bacilli Strains. (Der [illegible] wirtfremder Kolistämme [illegible]
94 Fat Acids in Stom [illegible] Mageninhalt.) Id.
95 *Foreign Bodies in Upper Air Passages and Esophagus. (Fremdkörper in den oberen Luft- und Speisewegen mit besonderer Berücksichtigung der Oesophagotomie.) H. Marschik and R. Vogel.
96 Diagnosis, Localization and Treatment of Echinococcus Disease. (Die Echinokokkuskrankheit.) F. Colombani.

91. Serotherapy of Cholera.—This communication reports the experiences at St. Petersburg with Kraus' antitoxic cholera serum. It was administered in 54 cases and 55.5 per cent. of the patients died, but in all but 4 of the cases the disease was in its severest form. The mortality without the serum in a corresponding series of 224 equally severe cases was 84.3 per cent. Kernig mentions that intravenous saline infusion proved a valuable adjuvant and may have been partly responsible for the better results in the serum-treated patients, as it was only rarely applied in the other series.

95. Foreign Bodies in Upper Air Passages and Esophagus.—In this report from von Eiselsberg's clinic the advantages of prompt tracheotomy are extolled as liable to give better results, in the hands of the general practitioner, than tedious attempts at extraction by the natural route with the inevitable injury from them and the bleeding. Some instructive skiagraphs are given and the point emphasized that a foreign body in the esophagus generally entails the same dangers as an incarcerated hernia. If extraction is not promptly successful, an operation should follow without delay. In 11 cases reported in detail, the outcome was favorable in 9, recovery taking place in from two to seven weeks. One child who had swallowed a coin succumbed to pneumonia a week after the esophagotomy. The other fatality was in the case of a man of 41 who had swallowed two false teeth set on a plate. After attempts at extraction with fingers and induced vomiting had failed, a physician tried to push the set down into the stomach and apparently succeeded as a sponge held in a coin catcher was passed through into the stomach and the patient was able to eat bread and potatoes, the stomach tube could be introduced without effort and Roentgen screen examination was constantly negative, but the patient complained of pain in the chest and a hard sound introduced encountered an obstacle, although the soft stomach sound passed readily into the stomach. Esophagotomy over a week after the teeth had been swallowed finally resulted in their removal, but in loosening the impacted teeth the wall of the esophagus was perforated, and septic pleurisy followed, which was soon fatal. The practice at the clinic is to introduce a sound and examine with the esophagoscope and try to remove the foreign body if known to be round and not firmly fixed. But if the case is old and the foreign body has pointed edges or is firmly impacted, esophagotomy is done at once for fear of digging a groove in the wall of the organ as the article is drawn out. The food after the operation is given through a bougie and nothing but milk and tea by the tablespoonful is allowed for the first two days. The third day the bougie is removed and the tampon in the second week, and healing is usually complete by the end of the third week.

Zentralblatt für Chirurgie, Leipsic

October 30, XXXVI, No. 44, pp. 1497-1528

97 *Proper Moment to Commence the Operation Under the First Whiffs of Ether. (Erkennung des richtigen Momentes im Aetherrausche.) J. Landström.

97. Operating Under First Whiffs of Ether.—Landström keeps the operating room perfectly quiet and watches the patient's throat as the ether is given. As soon as the patient feels the fumes of ether salivation is induced and he swallows at brief, regular intervals. When the anesthesia is deep enough to suspend the swallowing reaction to the salivation, this is the right moment for the operation to begin. So Landström waits until the patient ceases to make the swallowing movements or the intervals become much longer, and then commences the operation without further tests of the patient's sensibility.

Zentralblatt für Gynäkologie, Leipsic

October 9, XXXIII, No. 41, pp. 1417-1448

98 Advantages of Momburg Belt Tourniquet in Obstetrics. (Zur Anwendung der Blutleere der unteren Körperhälfte nach Momburg in der Geburtshilfe.) F. Weber.
99 Extraperitoneal Cesarean Section. (Zum extraperitonealen Kaiserschnitt.) M. Stolz.
100 Operative Treatment by Vaginal Route of Rupture of the Uterus. E. Falk.

October 16, No. 42, pp. 1449-1488

101 Application of Over-Pressure Apparatus to Revive Asphyxiated New-Born Infants. (Wiederbelebung asphyktischer Neugeborener mit Ueberdruckapparat.) C. Hoerder.

October 23, No. 43, pp. 1489-1520

102 Cesarean Section. (Zur Kaiserschnittfrage.) R. Olshausen.
103 Disinfection of Parturients. (Zur Frage der Desinfektion Kreissender.) M. Hofmeier.
104 Toxic Action of Human Placenta Extract in the Rabbit. (Ueber Besonderheiten der Giftwirkung des menschlichen Placentasaftes beim Kaninchen.) F. Schenk.
105 Hematoma of the Vulva. G. Neumann.

Gazzetta degli Ospedali e delle Cliniche, Milan

October 24, XXX, No. 127, pp. 1337-1352

106 *Influence on Metabolism of Chlorids, Phosphates and Water of Intrarectal or Subcutaneous Injection of Oxygen. (Il ricambio dell'acqua e dei sali, cloruri e fosfati, nei trasmodatori di bevande alcooliche, in rapporto alla sovraossigenazione extrapolmonare.) T. Salvetti.

106. Influence on Metabolism of Rectal or Subcutaneous Injection of Oxygen.—Bernabei's method of what he calls extrapulmonary superoxygenization was described in THE JOURNAL, May 23, 1903, p. 1474. Salvetti here describes the influence of this treatment on the elimination of water, of chlorids and of phosphates, especially in persons habitually taking alcohol. His findings confirm anew the notable stimulating action of the oxygen on the torpid cells, rousing them from the torpor resulting from alimentary intoxication, especially alcoholic intoxication.

Riforma Medica, Naples

October 25, XXV, No. 43, pp. 1177-1204

107 *Septicemic Fevers. (*Febbri e febbricole setticemiche polimorfe.* XII.) G. Rummo.
108 Tumors of Male Breast. (Contributo allo studio dei tumori della mammella maschile.) G. Zoni.
109 *Late [illegible] di polmonite latente.) G. Gentiti.
110 Two [illegible] lar Sclerosis. (Due casi di sclerosi a [illegible]

107. Septicemic Fevers.—This is the concluding article in the series in which Rummo has been discussing typhoid, paratyphoid, Malta fever, cryptogenic fever, colon bacillus infection, etc., which he groups together as polymorphous septicemic fevers and febrile conditions. They are the result not only of the action of the specific germs, but of their combinations or possibly their association with germs of different species. He denounces the conception of fever from autointoxication, saying that the importance of autoinfection and of the colon bacillus as the single factor in fevers has been much overestimated. The agglutinating reactions can be relied on in this septicemic group of fevers.

109. Latent Pneumonia.—Gentiti calls attention to latent pneumonia as the most dangerous form of this disease. The absence of râles, bronchial souffle, cough and expectoration, indicate a lack of resisting power against the diplococcus. In a case of this kind described, the patient was a man of 46, with a family history of tuberculosis and a long preceding tuberculous affection of the testicle requiring operative measures. The chill, pain in the right intercostal space, intense headache and high fever were not accompanied by any local signs of pneumonia for several days, but then slight expectoration followed and the pneumococcus was found in the sputum.

Hospitalstidende, Copenhagen

September 22, LII, No. 38, pp. 1169-1208

111 Multiple Edema Accompanied with Hemorrhages. (Et Tilfælde af multiple Øedemer ledsaget af Hæmorrhagier.) Kjelgaard.

September 29, No. 39, pp. 1209-1248

112 *Life Expectancy of Extra Hazardous Risks in Life Insurance. (Nogle Bemærkninger om Livsforsikringens "mindre gode Liv.") E. Salomonsen. Commenced in No. 38.

112. Ultimate Fate of Extra Hazardous Risks Among the Insured.—Salomonsen declares that the medical aspect of life-insurance is gradually working into a science, as the examiners are learning to estimate the "statistical prognosis" with as much accuracy as physicians now are able to estimate the clinical prognosis in a given case. Until recently the physician's interest in a case ceased when the patient had completely recovered. The surgeons introduced a revolution in this respect, as they found that they had to keep track of their patients to justify the expediency of their operative measures, proving in black and white that the life expectancy had been increased by their intervention. Physicians are now seeking to follow them in this line, trying to determine the influence on the life expectancy thereafter of the disease through which they have carried the patient and the influence the disease will have on the general resisting powers in later life. As a contribution to this subject he has been investigating the after-history of the candidates accepted with an extra rate by the Danmark, a Danish life-insurance company. He has thus sifted out 2,100 cases of extra-hazardous risks in going over the records of 30,000 insured between 1873 and 1906. His surprise was great when he found that the mortality among them was only 106 while the estimated mortality of a corresponding number of normal risks is 101.84. Another surprise was the discovery that the deaths were seldom due to the affection for which the insured had been rated as an extra risk. This has been shown in regard to hernia in the statistics from the German Gotha insurance company. Out of 3,104 persons with hernia insured, the hernia was responsible for the death in only 0.38 per cent. On the other hand, fatal incarcerated hernia caused the death of 0.2 per cent. who had no signs of hernia at the time of the medical examination. The mortality from syphilis is increasing among the syphilitics insured in the Scandinavian and other countries of Europe as it is now accepted as responsible for general paralysis. The statement by a medical examiner that the candidate has had syphilis but that it was mild and brief and consequently may be disregarded, is not endorsed by the companies now, as time has shown that general paralysis is most liable to develop in these mild cases owing to the lack of intensive treatment. In regard to tuberculosis, also, the general practitioner is liable to be more optimistic than is justified by the facts to date. The statistics from the sanatoriums, etc., include too few cases and extend over too few years to justify at present a favorable prognosis in regard to complete recovery after the disease has once been installed in one or both lungs. Some companies regard chronic otitis media as demanding an extra rate, but the mortality from this cause in the Danmark has been very low and in the Gotha company it was only 0.12 per cent. of 46,480 insured. The Danmark experiences with appendicitis confirm the assumption that the first attack is the dangerous one. None of the insured regarded as extra risks on account of preceding appendicitis died of appendicitis later; the deaths from it were all in persons free from a history of appendicitis. The Italian and Swiss companies have not suffered from losses with syphilitics so much as the Scandinavian, and he is inclined to accept the theory that this infection has become attenuated in these other countries where it is more prevalent, the population having become acclimated to it, as it were. He warns that in studying life-insurance statistics it must not be forgotten that the persons who drop out after keeping up their policies for a longer or shorter period are liable to prove misleading in drawing conclusions from the figures recorded. The Danmark statistics do not indicate that heredity has much influence on the development of cancer, but accurate knowledge on this point can be obtained only by study of the comparatively few who have been on the books for long series of years. He cites 15 cases of these extra-hazardous risks in which the dubious prognosis was confirmed by the death within a few years. In 6 in this group, a previous bronchitis or pneumonia had been followed by very protracted convalescence, several months elapsing before the men were able to resume work, but the physical findings were normal at the time of the medical examination for the company. In another case a man of 35 six years before had had a contusion of the chest followed by expectoration of a couple of teaspoonfuls of blood, but he soon recovered and had no trace of hemorrhage afterward. The breath sounds were a trifle diminished in intensity in the supraclavicular but not in the supraspinous fossa; otherwise the findings were normal. The examiner declared the man sound, but he died of consumption six years later. On the other hand, the records show numbers of insured apparently far more seriously handicapped who are still in good health. Salomonsen urges in conclusion that scientific study of the life expectancy after certain affections is liable to throw light on many other branches of medicine.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

The Medical Complications, Accidents and Sequels of Typhoid Fever and the Other Exanthemata. By Hobart Amory Hare, M.D., B.Sc., Professor [illegible] Jefferson Medical College of Philadelphia, a[illegible] M.D., L.R.C.P., Assistant [illegible] of the Jefferson Medical [illegible] a Special Chapter on the Mental Disturba[illegible] Fever. By F. X. Dercum, M.D., Professor [illegible] Diseases in the Jefferson Medical College. Cloth. Pp. 391, with 26 illustrations. Price $3.25 net. Philadelphia: Lea & Febiger.

Handbuch der Gesa[illegible] ngen der Elektrizitat einschliess[illegible] geben von Prof. Dr. med. H. Boru[illegible] ie an der Universität Berlin, und [illegible] lozent für Nervenheilkunde an der [illegible] Paper. Pp. 599, with illustrations. [illegible], 1909.

Surgery of the Brain and Spinal Cord. By Prof. Fedor Krause, M.D., Geh. Medizinalrat Dirigierender Arzt am Augusta Hospital zu Berlin. Translated by Prof. Herman A. Haubold, M.D., Clinical Professor in Surgery, Bellevue Hospital and New York University Medical College. Vol. I. Pp. 282, with illustrations. Price, $6.00. New York: Rebman Co.

Diagnostic Methods, Chemical, [illegible] croscopic. By Ralph W. Webster, M.D., Ph.D., [illegible] Pharmacologic Therapeutics and Instructor [illegible] Medical College, University of Chicago. Cloth. Pp. 611, with 211 illustrations. Price, $6.00 net. Philadelphia: P. Blakiston's Son & Co., 1909.

A System of Syphilis. Edited by D'Arcy Power, M.B., F.R.C.S., and J. Keogh Murphy, M.D., M.C., F.R.C.S. In Six Volumes. Vol. III. With an Introduction by Sir Jonathan Hutchinson, F.R.S. Cloth. Pp. 267, with illustrations. Price, $13.50. New York: Oxford University Press, 1909.

Food Inspection and Analysis. By Albert E. Leach, S.B., Chief of the Denver Food and Drug Inspection Laboratory, Bureau of Chemistry, U. S. Department of Agriculture. Second Edition. Cloth. Pp. 929, with 278 illustrations. Price, $7.50. New York: John Wiley & Sons, 1909.

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Original Articles

POPULAR EDUCATION AS A STIMULUS IN PUBLIC HEALTH WORK*

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In this paper I have made no effort to treat the subject of public health administration exhaustively, nor have I referred extensively to methods in use by other hygienists of the present or the past. I have simply stated some conclusions, together with the data on which they are founded, and in a way this paper is like a case report, dealing with my own work.

I have long been of the opinion that there are two distinct aspects of state medicine. One of these is knowing the remedy to be applied, and the other is knowing how to get the people to apply the remedy. The first consideration I take for granted as a requisite possessed by every good sanitarian. The second consideration—how to get the people to apply the remedy—is the main theme of this paper.

There are men, and intelligent men, who believe that the sanitarian, having decided on what he believes is the wisest course, has nothing left to do but to sail that course, regardless of public opinion. The sanitarian is a specialist in his line. He knows better than the public what health measures are needed. It is a sacred obligation with him to act in accordance with what he knows to be right, let the people believe what they will. This view is the correct one whenever the sanitarian has authority and means necessary to carry his plans into execution. But there are many reforms needed in our country which are at present outside the authority of the health officers. To secure the authority and means to enact the needed reforms is the task of the sanitarian.

This brings us face to face with the question how the people can be induced to yield the authority and money for the purpose of combating the diseases which menace the public health. To meet this issue successfully the sanitarian must possess a certain degree of tact, political ability, or statesmanship—call it what you may. He must be able to divert a part of the sum total of political power invested in the people and guide it into certain channels.

In doing this the sanitarian does not deal with the populace directly, but with representatives of the people, public officers. These officers draw their powers from the rank and file of the citizens. While to a certain extent they are leaders, yet they are to a great extent followers of public opinion. Personally they are willing to do anything to help the cause of sanitation, but before "going on record" as favoring the establishment of an improved water-works system, for instance, they usually delay action until popular clamor makes itself heard in favor of the proposed reform.

Vox populi is *vox dei*. The sovereign people are the fountainhead of all authority in a free republic, and to get the authority, or the money, which is the sinews of war against disease, it is necessary to go to that fountainhead. If you stop short of the fountainhead, there is always some one else upstream from you who is diverting the current.

I have found that one most excellent method of reaching the people is through the newspapers. In the administration of almost any health officer, there occur events of great value as "news." In giving these news items to the press, it is well to sandwich in a miniature lecture on sanitation with each news item. Of course, if the tidbit of news is ballasted too heavily with scientific "dope," it will find the waste-basket. But in many cases, an interview from the health officer, telling "how it happened" is warmly welcomed by the press, even though the interview read like a primer on sanitation.

Next to his ubiquitousness the most characteristic thing about the average newspaper reporter is his skill in getting things wrong. This makes it necessary to prepare certain important interviews and hand them in already written to the newspapers. It is easy to overstep the line here and overlook the newspapers.

In newspaper work, as in every other branch of hygienic education, cooperation by different health officers and physicians is very important. Public meetings participated in by the lay and professional public are an excellent means of stimulating sanitation. The physician has by dint of hard labor become master of a certain amount of that divine attribute called knowledge. The public is hungry for this knowledge; people never fail to avail themselves of an opportunity to stand by and pick up the crumbs from a medical conversation. The public meeting offers the health officer an opportunity to dole out to them such store of his knowledge as they can digest and assimilate. To get best results it is absolutely necessary that no physicians should stand aloof and criticize. Therefore, careful organization is a prerequisite.

Closely related to these public meetings are the so-called traveling institutes of hygiene, as elaborated by my friend, Dr. Mayer, of Louisiana. The "tuberculosis exhibits" are all special phases of his original idea, which was promulgated years before the awakening on the subject of phthisis. The traveling exhibit, consisting of pictures, models, charts, figures, and other accessories are valuable because they stimulate interest and also because they make the subject-matter easier to grasp. Concrete facts are learned easily, and the eye aids the brain in learning the scientific data presented in one of these traveling institutes of hygiene. I am of the opinion that the typhoid fly should be included in these exhibits as well as the tuberculous cow. I think the vaccination problem should be explained and pictures bearing on it exhibited. In certain of the southern states the malarial mosquito should be explained. In short, I think that traveling exhibits are needed to teach the whole of sanitation and preventive medicine, as well as tuberculosis.

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*Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

In this connection it occurs to me that the state boards of health are in a position to aid the counties or cities by sending on request a lecturer and demonstrator with an exhibit. The peculiar quality of mind which leads the people to heed the advice of a stranger, where they ignore the words of their lifelong friends, is proverbial. For this reason the health officer of County A can go to County B and lecture with splendid results. Later, the health officer from County B, looked on as a commonplace man in his own county, can come into County A and preach sanitation with results as brilliant.

In a similar way, the U. S. Public Health and Marine-Hospital Service can materially assist each individual state in the battle for better public health. The surgeon who is an officer in this distinguished service enjoys a prestige and renown commensurate with the great corps to which he belongs. The public looks up to him. His words are heeded. Furthermore, his official position is a guarantee that he will be free from any local prejudice. The public does not suspect his motive. He is probably not even a resident of the state in which he may lecture, and may expect to leave that state immediately, possibly never to return. Under these circumstances his words have an unusual burden of meaning which make them productive of much good. I then would call your attention to the fact that cooperation between county and state, and between state and nation, is essential to the best interests of public health.

In conclusion, I desire to refer to one phase of public health administration which frequently causes embarrassment, especially in the southern and western states. I refer to the fact that many of our public health officers are engaged in the private practice of medicine. This is at present a widespread condition, and one that is as natural as for water to run down hill. But it very seriously hampers the cause of public health. The health officer may be entirely conscientious and I take it for granted that he is, and that he does his work thoroughly. The fact remains, however, that his competing fellow practitioners of medicine look askance at any public utterances which he may make. The "publicity side" offends them. They want him to keep himself in the background. Now, no health officer can do his duty without appearing in the lime-light from time to time. Hence he is driven to do one of two things—either offend his fellow practitioners by coming out in the open, or compromise his conscience by lying low and letting things drift. He has no choice between the two. The only logical result will be in the end that health officers will be paid to do their work, so they will not have to do practice on the side to gain a livelihood. We should work toward that end, remembering that for the present we must do the best we can with the means at our disposal.

ABSTRACT OF DISCUSSION

Dr. William Porter, St. Louis: The education of the people underlies all activity and organization in this work. People must know. Once having knowledge they will support that which touches their lives and homes and happiness. It is well, it is necessary, to have men fitted to give this instruction, and these men or others should be ready to direct the growth and movement which will surely come in the wake of public instruction. In the masses, even in the most ignorant parts of our cities, where crowded, congested living is most pitiable, is a latent force which once aroused is potent for good, and for progress. In St. Louis is a man whose home and early life was in the worst ward of the city. His associations were bad; he grew up thoughtless and careless; his name was synonym for leadership among the worst classes. Slowly but surely the desire came to him to do something for his associates. In so doing he lifted himself. He saw a great light—to-day he is an honored state senator, one of the best helpers we have in all that pertains to the uplift of the needy and the limitation of disease. It is such influences as these, resulting from years of educational work in the field, that has given to Missouri its present beautiful sanatorium for incipient tuberculosis with its half a million appropriation; has given it the Commission on Tuberculosis with its $125,000 for five years' further educational work, and has entered the penitentiary with an investigating committee and aids in the segregation of convicts.

We of Missouri are often asked why our people are so liberal to these causes. It is simply the harvest of the seed that has been patiently sown. We are fortunate in that our governor and the mayor of St. Louis are with us, but back of these are the masses—the people on whom we can depend. I urge the use of the newspaper under proper surveillance, the public lecture, and the instruction of the school children by illustration and text-book. The former is an important but delicate matter; the latter is best of all for future results. Every child should have access to lectures and exhibits and carry into the home a well-prepared leaflet with simple notations. Five hundred thousand of these have been carried into St. Louis homes by the children of public and parochial schools.

Dr. Juan Guiteras, Havana, Cuba: There does not appear to be any sustained effort made throughout the South to impress on the people the lessons of experience in the matter of antimosquito campaigns for the prevention of yellow fever and malaria. The cities of the South, I am sorry to say, are still trusting solely to methods of quarantine that have been proved in the past, on many occasions, to be inadequate. Unfortunately, the great object lesson offered by Cuba has not been brought clearly before the people; on the contrary, in some quarters an effort has been made to obscure it. The success of Cuba in keeping down and within reasonable limitations the recent visitation of yellow fever in that country, has not been appreciated in the proper spirit by our neighbors of the southern states. During three years of our recent visitation (1905-1908) we had nowhere the widespread epidemic manifestations that characterized the days of the Spanish domination there, or of the recent outbreaks of Laredo, New Orleans and Pensacola. The reasons for this difference are two: First, we have never hesitated a moment in announcing the first appearance of the disease, and in taking frankly and openly the necessary step towards preventing its propagation. The press, throughout the South, did not, as a rule, endeavor to show the advantages of such a procedure. On the contrary, the impression was created, with a degree of unfairness which was very unpleasant at times, that the cases were being discovered and made public by state and United States medical representatives in Cuba. The people of the South were usually informed by cable in words to this effect: "The representative of the State Board of Louisiana in Cuba reports three cases of yellow fever to-day in Havana;" or another officer would cable: "I found a case of yellow fever to-day at Las Animas Hospital," and so forth. Now, as a matter of fact, the cases were invariably discovered, shown, and reported by the Cuban sanitary authorities, who were most anxious to demonstrate what they considered an essential part of their successful method of controlling the disease. To report the facts otherwise was unfair to Cuba, and it was most unfair to the people of the South who lost thereby the educational advantages that they should have derived from the contemplation of a successful campaign on the basis of a prompt declaration. The second reason of the difference in the results obtained is the maintenance of a persistent and continued fight against the stegomyia. I am afraid that little or nothing is being done in this direction throughout the South.

MEDICAL SUPERVISION OF ATHLETICS AMONG BOYS AT BOARDING SCHOOL[*]

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Several years ago a boy of 15 was brought to one of us with a markedly dilated heart. For some weeks he had been running a mile nearly every afternoon at one of the best-known boarding schools in New England. Since then, among others, a boy with pulmonary tuberculosis, another with so-called physiologic albuminuria, another with leukemia, a fourth with pronounced cardiac insufficiency and much overgrown, from four different and all excellent boarding schools, have been brought to the attention of one of us, and in none of them had their condition been recognized or properly studied. The observation of these cases stimulated this preliminary study of selected boys before and after exercise at a number of boarding-schools.

We first examined 38 boys, 36 of them from five boarding schools, two in Connecticut, two in New York and one in New Jersey; and 2 of the boys from a day school in New York City. After examination each boy ran a mile at his own pace, was re-examined immediately on finishing the run, and in most instances a third time, from one-half to three-quarters of an hour later. The accompanying table shows the results of our examinations.

The method followed in each case was, first, to count the pulse and to estimate the systolic blood-pressure in the vertical posture; then to determine in the horizontal posture whether there existed any increase of cardiac dulness, the relations of the pulmonic and aortic second sounds, the presence of apical or basal murmurs and the existence of a thrill; and, while the boy was still in the recumbent posture, to count the pulse again and to estimate the systolic blood-pressure. The first specimen of urine was passed by each boy just before the run and, with the exception of the nine boys at School A, the second specimen was passed during the time of the third examination, one-half to three-quarters of an hour after the exercise. In School A a period of about two hours elapsed after the exercise before the second specimens were voided. These specimens were all examined as freshly as possible by Dr. Wilson G. Wood, to whom our thanks are due. He, of course, knew no details of our physical examination.

Selection of Boys.—At each school an effort was made to select half the number from boys especially vigorous, athletic, muscular and well developed, and the other half from boys who had grown considerably especially in height during the past two years. This effort was only partially successful.

Selection of Exercise.—It was found impossible to examine boys before and after a contest. One of us made this attempt at a dual meet between two schools but failed. The interest was centered elsewhere and the noise and confusion rendered examination impracticable. We chose a mile run as being a good test of strength and endurance for boys of this age, able to participate in football, hockey, basket-ball, track athletics, rowing and baseball. Each boy was told to take his own time and not to overexert himself, but to finish his run reasonably strong. There was no competition, although the boys were interested and some of them surprised at the time they made. Generally speaking, the most athletic of the boys made the best time and usually showed the least effect of the exertion.

We wish to call especial attention to some of the features of the examination in the following:

School A.—Nine boys training for the crew were selected. After examination each boy ran a mile at his own speed. No. 4, aged 18, one of the best oarsmen and said to be the hardest worker, exhibited a reverse blood-pressure,[1] an enlarged heart both to the right and left, a loud systolic murmur at the apex and base, an accentuated pulmonic second sound, and a slight thrill at the apex. His urine, voided after exercise, showed a marked trace of albumin, and casts were detected in both specimens. The boy stated that he tasted blood during the run, and that this was a usual occurrence with him during or after hard exercise. Two other boys exhibited casts in both specimens. Three other boys exhibited albumin in both specimens.

School B.—Nine boys were selected as well as possible according to the plan specified above. No. 17, aged 19, the best runner in the school, who recently broke the school record for a mile, ran his mile easily and in good time. He exhibited an enlarged heart both to the right and the left, a heaving apex-beat, a systolic murmur at the apex and base, and an accentuated pulmonic second sound. His urine, voided after the run, showed a marked trace of albumin.

No. 11, aged 19, a large, muscular, strong boy, was said to have injured his heart playing football two years before. He showed a reverse blood-pressure, a slight emphysema, a slight increase of cardiac dulness to the left, a systolic murmur at the apex and an accentuated pulmonic second sound. His urine, voided after exercise, exhibited a faint trace of albumin.

No. 10, aged 17, a tall, slight boy, who had grown four inches in the past year, had been compelled during the winter to enter a lower form. He has had digestive disturbances, some circulatory weakness and several attacks of furunculosis during the past two years. He exhibited a reverse blood-pressure; his pulse before exercise was 118 in the vertical posture and 96 in the horizontal; after exercise, 152 and 124. His cardiac dulness was diminished, and he was exhausted after the exercise. Albumin and casts were found in both specimens of urine.

School C.—Eight boys were selected at random. No. 20, aged 17½, was a large, well-developed boy, had ruptured a vessel in the sclera of one eye a few days before while wrestling. He exhibited a high blood-pressure, vertical 175 mm., horizontal 150 mm., before exercise. His heart was enlarged, there was a loud systolic murmur at apex and base, and an accentuated pulmonic second sound. Both albumin and casts were present in the urine voided after the run.

School D.—Seven boys were selected from those who were training for track athletics; all of them showed albumin, and three of them casts, in the specimens of urine passed after the exercise.

No. 30, aged 15, a tall boy with remarkably well-developed legs and thighs, had grown decidedly during the past year. His pulse was 180 after the run. His blood-pressure was rather high before and rather low after the exercise. His urine contained albumin and casts in both specimens, and in the one voided after the run the albumin was a heavy trace and the casts were in great abundance.

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[*] Read in the Section on Practice of Medicine of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] This method of testing the blood pressure was suggested to us by Dr. George L. Meylan, Adjunct Professor of Physical Education, Columbia University. The existence of what we have termed a "*reverse blood-pressure*," i. e. a higher blood-pressure in the horizontal than the vertical posture, he tells us, has often suggested some circulatory weakness which seems wise to supervise by repeated examination before a student is allowed to compete for a position on some college team.

In addition to these thirty-eight boys, six boys at School G in Massachusetts were examined before and after a quarter-mile run, the results of which are summarized in Table 2.

One of these boys, at the age of 13, exercised unduly the first year he passed at this school and was found to have a dilated heart when he returned home on a vacation. Our examination, made at the age of 19, showed slight thickening of the arteries, slight cyanotic color, an enlarged heart, a loud systolic murmur at the base, and an accentuated pulmonic second sound.

Eight boys were examined at School H in Massachusetts, before a one and a half mile practice row, and four of them after the row. Two exhibited a reverse blood-pressure. Albumin was found in all four specimens of urine voided after exercise; the sediments were not examined because the urine had decomposed. One of these four boys showed after the row, in addition to the reverse blood-pressure, a moderate cardiac dilatation and slight evidence of exhaustion.

Six of the Columbia freshman crew, ages 16 to 22, average 18½, were examined before and after a light practice row. The blood-pressure was reversed in three

AGES, 15 TO 19 YEARS; AVERAGE, 17 YEARS. TIME OF RUN, 61 TO 72 SECONDS

	No.	%
Pulse		
Irregular pulse	3	50
80 or above, before	2	33⅓
Horizontal > Vertical	0	0
150 or more, after	0	0
112 or more, half hour after	0	0
Blood-Pressure		
H > V, before	3	50
H > V, half hour after	1	16⅔
150 M.m. or above, before	0	0
Heart		
Dulness + to Right	2	33⅓
Dulness + to Left	1	16⅔
Dulness + above	0	0
Pulse 2°+	2	33⅓
Aortic+	2	33⅓
Apical murmur	2	33⅓
Basal murmur	3	50
Thrill	2	33⅓
Urine		
No mkd. + indican; no acetone		
Albumin, before	2	33⅓
Casts, before	0	0
Albumin, after	2	33⅓
Casts, after	1	16⅔
Red blood cells	1	16⅔

TABLE 1.—EFFECTS OF EXERCISE

Form of exercise	A.—One Mile Run (plus).									B.—One Mile run.								
Athletic No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Time in minutes	8	9½	6¾	8	5+	7½	7	7	7	8	6¾	5⅔	7½	6	8¼	5⅞	5⅞	7½
Exercise habit	Mod.	Sl.	Sl.	++	++	Mod.	+	+	++	Sl.	++	++	m.	+	Sl.	+	++	++
Boy's age	19	17	17	18	19	19	18	17+	19	17	19	19	19	16	19	18	19	21
During past 2 years; marked increase in height	+	+	0	+	0	0	0	+	0	++	0	+	0	+	0	0	0	0
During past 2 years; marked increase in weight	+	+	0	+	+	+	0	0	+	+	+	+	+	+	+	0	0	0
		Tired.		Tasted blood.				Had a cold.		Exhausted.	Emphysema.	Pale.	Dusky.		Exhausted.		Dusky.	Tired; played baseball.
Pulse: Irregularity	+	0	0	0	+	0	0	+	+	+	0	0	+	0	0	0	0	0
Before exercise, Vertical	84	94	74	50	76	80	70	64	60	118	86	80	72	76	92	74	70	76
Before exercise, Horizontal	66	74	62	48	54	60	66	52	54	96	70	78	80	64	96	68	64	72
After exercise, Vertical	134	142	120	112	108	140	130	122	108	152	120	156	126	124	156	144	120	162
After exercise, Horizontal	118	132	96	96	104	112	112	120	96	124	96	116	108	100	110	116	104	104
⅓ to ¾ hrs. after exercise, Vertical	104	114	102	76	84	106	100	90	80	124	88	104	112	88	100	100	84	104
⅓ to ¾ hrs. after exercise, Horizontal	72	90	80	68	74	94	76	66	64	100	72	96	94	76	96	86	84	100
Blood pressure: Before exercise, Vertical	138	128	135	120	130	128	140	118	150	112	126	160	128	128	131	146	145	150
Before exercise, Horizontal	134	118	120	128	130	128	130	128	140	132	138	155	135	112	132	135	130	135
After exercise, Vertical	140	175	170	178	158	170	165	138	150	115	180	200	185	180	182	180	200	150
After exercise, Horizontal	132	106	115	140	148	141	135	138	120	120	160	193	160	160	160	188	160	152
½ to ⅔ hrs. after exercise, Vertical	105	115	100	105	108	115	112	112	132	100	128	135	115	120	135	135	134	130
½ to ⅔ hrs. after exercise, Horizontal	118	120	120	130	120	130	118	130	130	120	128	135	140	118	135	150	130	125
Heart: Cardiac dulness, + to right	+	0	0	+	Sl.	Sl.	Sl.	0	0	0	0	0	0	+	0	0	+	0
Cardiac dulness, + to left	0	Sl.	0	++	+	0	Sl.	0	0	0	0	Sl.	0	+	+	0	++	Sl.
Cardiac dulness, + above	0	0	Sl.	0	0	Sl.	0	0	0	0	0	0	0	0	0	0	0	0
Pulmonic 2d, +	0	+	0	+	+	Sl.	0	Sl.	0	Sl.	+	+	0	+	Sl.	0	+	Sl.
Aortic 2d, +	0	0	Sl.	0	0	0	Sl.	0	Sl.	0	0	0	0	0	0	0	+	0
Murmur, apex	+	Ft.	+	++	......	+	+	0	Ft.	0	Ft.	+	+	0	+	Ft.	++	0
Murmur, base	+	+	+	++	+	+	0	0	Ft.	0	Ft.	+	+	0	+	Ft.	++	0
Thrill	+	0	0	++	0	0	0	0	0	0	0	+	0	0	0	0	0	0
						Art. + F. R.									Gallop.		Heaving.	
Urine: Albumin, before	0	+	+++	0	+	0	0	0	0	+	0	+	0	0	0	0	0	0
Casts, before	+	0	0	+	0	0	0	0	0	+	0	0	+	0	0	0	0	0
Albumin, after	++	++	++	++	+	+	+	+	0	+++	+	++	+	+	+	+	++	0
Casts after	+++	+	+	+	0	0	+	0	+	+	0	?	+	0	0	0	0	0
Albumin, next morning	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Casts, next morning	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......

Indican: No marked excess was found in any specimen. Acetone: No acetone found in any specimen.

50 per cent. One of these three, who had been under Dr. Meylan's observation on account of a rapid pulse persisting after an attack of influenza in February, showed in the examination of urine after the row a heavy cloud of albumin and many casts. Another, aged 19, had grown markedly in the past year. The examination of the urine, both before and after, showed a trace of albumin and many casts in the specimen after the exercise. Another of these, aged 18, was the only one who showed any evidence of fatigue after the light row. He exhibited some emphysema. He had played water polo hard during the winter. There was a cloud of albumin and casts in the specimen taken after the exercise.

Ten Marathon runners were examined after the race, and all except one exhibited a low blood-pressure; 90 to 100 mm. The exception, the winner, showed 160 after and 120 before. Three were examined before and after another race. In the examination afterward all showed a blood-pressure below 105, while in that made before all showed a blood-pressure above 140.

These examinations show that some of the boys should not be allowed to take part in strenuous exercises or competitive sports unless carefully supervised by a competent physician. Permanent physical injury has resulted in the past which might have been prevented by careful watching; and the same harm will occur in the future. In most of the schools we visited an earnest effort has already been made to watch the boys more carefully; but, in our judgment, it was more in the direction of copying the college athletic training, in the effort to turn out winners, than with the idea of individualization and careful medical supervision. Even a competent supervisor is hardly capable of discriminating in some of the border-line cases cited above as to whether to permit exercise, to increase or to diminish it. The school physician examines each boy in the fall and again whenever called on to do so; but we found no definite, purposeful method of physical or urinary examination before or after such a functional test as we applied; nor any plan for an examination by the school physician before and after hard-matched games, although the frequency of the latter in some of the schools was quite as striking as at colleges. One of these physicians told us that some of the boys grew so rapidly that the fall examination was of little or no value in the spring.

It is not the province of this paper to discuss the significance of albumin and casts in the urinary analysis

ON THIRTY-EIGHT SCHOOLBOYS

C—One Mile Run.								D.—Equivalent of 1 Mile +.							E.—One Mile Indoors.			F.—One mile.	
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
10	......	8⅓	6¼	5⅓	......	......	8½	......	......	......	......	......	......	......	5⅔	6½	6	6	5⅔
Sl.	+	+	+	++	+	+	Mod.	+	+	Mod.	Mod.	Sl.	Sl.	Mod.	++	Mod.	Mod.	+	+
18	17½	16	18	19	15½	17	15¾	19	18¾	14¾	15	17¾	18	17	17	18	18	20	19
0	0	+	0	0	+	0	+	0	0	0	++	0	0	0	0	+	0	0	0
0	0	Sl.	0	+	Sl.	0	+	0	0	+	+	0	0	+	+	+	0	0	+
Vegetarian.	Ruptured bl. vs. sclera.		Tired; played baseball.				Dusky.	Pale.		Did not finish.		Exhausted.	Did not finish.				Pale.	Exhausted.	
0	0	0	+	+	0	0	+.	0	+	0	0	0	0	0	0	0	0	++	0
84	96	102	84	86	90	96	104	82	74	90	78	74	80	88	84	64	84	96	84
72	100	98	68	72	88	80	102	82	60	72	56	62	76	80	75	60	84	84	64
130	180	160	134	112	160	146	171	144	126	98	180	132	120	152	150	144	150	116	156
106	120	128	124	96	112	112	116	120	92	88	120	100	112	108	132	114	120	108	116
......	120	118	116	100	96	92	104	108	92	90	116	104	116	112					
......	100	112	106	72	78	80	92	88	80	86	74	88	100	84					
132	175	138	140	135	140	Irreg. 150	132	115	140	105	150	130	132	150	138	134	136		
122	150	128	120	130	120	130	130	120	148	125	150	140	138	150	140	126	124		
120	165	135	150	170	165	160	120	170	130	115	132	105	135	128	154	134	166		
135	165	150	165	130	160	178	140	180	150	140	170	140	150	140	166	124	144		
......	148	116	100	122	123	120	110	100	112	100	100	110	120	140					
......	138	120	112	130	138	118	135	105	120	120	110	130	128	140					
0	++	0	0	Sl.	0	0	0	0	0	0	0	0	0	+	0	0	Sl.+	0	0
Sl.	Sl.	0	Sl.	Sl.	0	0	0	Sl.	0	0	0	Sl.	0	+	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	+	Sl.	0	0	Sl.	0	0	0	0	Sl.	0	+	0	+	0	Sl.	Sl.	0	Sl.
0	0	0	0	+	0	+	0	+	0	0	0	0	0	0	0	0	0	0	0
0	++	0	+	0	+	0	0	0	0	0	0	+	0	0	0	0	0	0	0
Ft.	++	Ft.	+	0	+	0	+	0	0	0	0	+	0	+	0	0	0	0	0
0	0	0	0	0	0	0	0	+	0	0	0	0	0	0	0	0	0	0	0
		Fetal.				Art. +.					Red. 1st.								
0	0	+	0	0	0	+	0	+	0	0	+++	0	0	......	0	0	......	0	0
0	0	0	0	0	0	0	0	+	+	0	+	0	0	......	0	0	0	0	0
+	+	++	+	0	0	+	+	++	+	+	+++	+	++	0	++	++	+	0	0
0	+	+	0	0	0	+	0	++	0	0	+++	0	+	0	+	0	++	0	0
......	......	......	......	......	......	......	......	0	0	0	Sick.	0	0	0					
......	......	......	......	......	......	......	......	0	0	0	Sick.	0	0	+					

before and after exercise. Darling and others have shown that albumin and casts appear very often in the urine of young healthy adults after severe exercise. But some of our specimens showed albumin and casts before exercise and others showed a considerable amount of albumin and a great many casts after exercise. Such cases are evidently on the border-line between health and disease, if not beyond it, and merit careful supervision and individualization. Nor do we propose to dilate on the type of physical examination or functional test. A mile run is obviously too severe a strain for some boys, but, if so, these boys should not be allowed to compete in hard contests. From the results of the tests we made it is evident that many of the boys require as much careful supervision over their athletics as they do over their lessons.

It is an important question to determine the advisability of so much devotion to athletics among school boys; but it is within the range of this paper only to urge proper medical supervision over a part of the schoolboy's life, which in his eyes at least is quite as important as his studies. Colleges foster the spirit of competitive games; newspapers dilate on them; the age demands athletic development in the youth; but a growing boy, crowded hard at his lessons so as to pass his college examinations, may not be able to withstand repeated and continued athletic training.

48 West Fifty-first Street.

ABSTRACT OF DISCUSSION

Dr. De Lancey Rochester, Buffalo, N. Y.: I was much interested in Dr. Potter's paper, because of the occurrence of three cases of serious heart trouble which developed in boys under my observation who were engaged in school athletics. A point not brought out in the paper was the evil occasionally resulting from jumping. I have seen one case of flatfoot from this. I think one of the most serious things in athletic contests is the fact that they are contests. Games in schools are very good for the children; but I think that competition, which enters so largely into these contests, makes the boys overdo it to a great extent. Moreover, athletics are now appearing in the lower grades of schools, and I have now under observation two boys, 8 years of age, who have been injured by these athletic contests in school. These children are encouraged by their masters, and I believe there is great danger of the masters encouraging the boys too much, urging them on in these athletic contests to the physical injury of the boys.

Dr. Richard C. Cabot, Boston: Dr. Potter's paper backs up the conclusions reached by Dr. Darling of Cambridge in his observations on certain athletes, such as football players, An interesting point which Dr. Darling emphasized is that in fatigue we get conditions, not exactly healthy or exactly diseased, according to ordinary conceptions. He found in fatigue states not only a marked leucocytosis, but abnormal forms of leucocytes, such as are not to be discovered at all in health. Yet all these things apparently work no permanent harm to the individual. In one of Dr. Darling's cases (after a boat race) anyone would have said that the urine showed an acute nephritis; there was present a large amount of albumin, blood and many casts. Yet within a few days the urine was normal again. To me an interesting point is that from mere fatigue such changes can be produced in the heart, the blood and the kidneys. I should like to ask Dr. Potter the reason for this "reversed blood pressure." Why was it greater in the horizontal than in the upright position?

Dr. Stanley P. Black, Pasadena, Cal.: I should like to know how many of these athletes develop endocarditis, a severe endocarditis. I am afraid that we are developing heart troubles in the children. A child of 8 years is now taught to run one mile. I have seen young children run until they fall from exhaustion, unconscious on the track. I think it is an outrage that such is allowed, and the medical profession should enter a protest against the manner athletics is often carried on.

Dr. Nathaniel Bowditch Potter, New York: We attempted to estimate the blood pressure in the horizontal and in the upright position, because Dr. Meylan, in examining students at Columbia University, found that students whose vertical pressure was lower than the horizontal pressure needed careful watching. In our observations we hoped to find something definite from the test, but I can not say that we did. Many of the boys showed rather excessive fatigue after the race, presented a greater amount of albumin and a larger number of casts, or showed an abnormal heart's action, and some of these boys exhibited a reverse pressure which most of the others did not. In one of the schools where I examined six boys before and after a quarter-mile run, one boy exhibited a marked cardiac enlargement and a reverse blood pressure. Six years before, while at home on his vacation, Dr. Favill of Chicago asked Dr. Billings to examine the boy's heart. The boy had a dilated heart.

THE USES AND LIMITATIONS OF EXAMINATIONS OF THE STOMACH CONTENTS *

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The stomach-tube should not be too small; for an adult it should be from 30 to 35 French scale. It should not be too flexible; it should support its own weight held in the upright position for the length of twelve inches without bending. It should have the largest-caliber possible without making it liable to bend sharply at an angle when pressed on. A good deal depends on the quality of the rubber; much depends on the character of the tube. It should have no pumping apparatus connected with it and it should be about 54 inches long.

On the introduction of the tube it is occasionally grasped by the esophagus about 8 or 10 inches from the teeth. If this delay is temporary, it depends on spasm, and one may expect to find either cardiospasmus or stricture at the cardia.

Finding portions of the test meal returned when the tube has passed about 14 inches, the food being unmixed with gastric juice, is evidence of obstruction of some kind at the cardia, the retention of food in the esophagus and probably dilatation of the latter.

If in pressing the tube onward it stops at the cardia or, engaging in a spasmodic contraction, is held fast, we may infer the existence of stricture or spasm at the end of the esophagus.

On passing the tube into the stomach we usually obtain the best reflow at a distance of from 21 to 22 inches from the teeth, provided the patient is an adult of ordinary stature, having the stomach in position and of normal size.

Where the stomach is high this result may be obtained at 18 inches. In a very tall person the tube may have to be passed 24 inches or beyond, even when the stomach is in a normal position.

When the tube is passed 20 to 22 inches we may find stomach contents; and on aspirating this, the tube being pressed further on, after a little resistance, it apparently gets into a second cavity from which stomach contents of different character is removed. This indicates an hour-glass stomach or a spasmodic contraction of the stomach between the second and the last third of the organ; in other words, at the antrum pylori.

When, after passing the tube the usual distance, we find present an unusually large amount of the test meal at the proper time, it indicates moderate motor insufficiency of the stomach which may depend on atony or on some opposition at the pylorus.

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

If we find a large quantity of the test meal present undergoing fermentation, having a "musty" odor, showing a large quantity of bacteria and sarcinæ and full secretion of hydrochloric acid, with few lactic acid bacilli, it is indicative of benign obstruction at the pylorus.

If we find stagnating food of foul odor, either with or without free hydrochloric acid, with lactic acid present, together with the Oppler-Boas bacilli and unchanged or occult blood, it suggests malignancy and obstruction.

The presence of too little of the test meal at the usual time with, however, the presence of gastric juice, suggests overmotor activity.

When we find the stomach empty or find present too little of the test meal and no gastric juice, it indicates excessive motor activity, probably associated with achylia gastrica (frequently present in pernicious anemia).

A conclusion should not be reached by a single examination. On one day there may be found the absence of gastric secretion and on the next an excess of it. On one day the food may be retained beyond the usual time and on another it may have passed onward too quickly. From this we conclude that the patient is the subject of nervous disturbance, perhaps excited by the very practice of lavage.

When we find habitually an acidity above 60, depending on hydrochloric acid, free or combined, the presence of hyperchlorhydria is suggested.

Hyperchlorhydria, however, is not to be determined by a given standard. The secretions of the stomach are seldom stable and should not be fixed by positive laws. A secretion normal with one person is excessive with another. In other words, some patients suffer from the symptoms of hyperchlorhydria when the secretion is decidedly below the standard. Such patients may be victims of gastric hyperesthesia.

There are cases of practical suspension of the gastric secretory function with symptoms similar to those of hyperchlorhydria; these are probably instances of chronic glandular gastritis with exacerbations accompanied by symptoms of irritation.

Overacidity, with delay in digestion of starch, is indicative of hyperchlorhydria.

A high total acidity, depending mostly on free hydrochloric acid, suggests a defect in secretion of enzymes.

A high total acidity, depending largely on combined chlorids, suggests an active secretion of the enzymes.

The presence of mucus in excess should always attract attention. Large quantities of glairy, ropy mucus, unmixed with the test meal, indicates esophageal mucus which has entered the stomach through the irritation occasioned by the passing of the tube. It often occurs when the tube has been introduced in a clumsy manner. It is not indicative of gastritis.

Finding a mass of nummular sputa, often accompanied by pus and by epithelium from the respiratory tract, indicates that the mucus has been swallowed and is not of stomach origin.

When mucus is found thoroughly intermixed with the test meal, usually not glairy or ropy, it probably comes from the gastric mucosa, and is indicative of catarrhal gastritis.

The presence of occult blood, or blood cells having undergone change by digestion, is evidence that hemorrhage has taken place in the stomach with active secretion such as occurs in ulcer.

If the blood cells are found intact it speaks for recent hemorrhage or lack of digestive power, or both.

The presence of blood with mucus and pus cells, apparently not coming from the respiratory passages, with fragments of tissue, suggests ulceration or degeneration of the gastric mucosa and probably malignancy.

A slow return of the gastric contents through the tube, showing little pressure from below, is indicative of atony and probably of dilatation.

Finding food remaining after washing for a considerable time is evidence of atony and probably dilatation.

Finding that the stomach holds, without inconvenience, a large quantity of fluid is indicative of dilatation; however, testing the capacity of the organ in this manner is a practice not recommended.

On the other hand, if the stomach contents return through the tube with some force, it indicates a strong motor activity or a stomach greatly overdistended with contents—certainly a high pressure. (Under such circumstances we should attempt to rule out the elements of strong contraction of the abdominal muscles.)

A forcible return may occur in dilatation provided there is hypertrophy of the muscle walls as a result of pyloric stenosis.

Violent or spasmodic spurts, coming from the stomach-tube, result from sudden contraction of the abdominal muscles and a suddenly increased intra-abdominal pressure.

When bile is found in the stomach contents it probably depends on relaxation of the pylorus with upward pressure of the duodenal contents through contraction of the abdominal muscles, or reverse peristalsis.

When the proximal end of the tube is held beneath water and bubbles of gas escape through it, it is indicative of an excess of gas in the stomach.

When no gas escapes from the stomach, even though the patient complains of continuous eructations, it may be argued that the gas is not formed in the stomach by fermentation, but that we are dealing with a hysterical condition.

The slow change of albumin, especially of meat fibers, shows that the gastric digestion is retarded.

The presence of the odor of fatty acids, of a "musty" or vinous odor, is evidence of fermentation.

Too much importance should not be attributed in stomach examinations to the disturbances in secretion.

The greatest importance should be attributed to evidence of disturbances in motion.

The diagnosis of stomach diseases should not be made solely by examination of the gastric contents, but by the results of this method considered in connection with the symptomatology and with the estimation of all the facts in the case.

Wrong conceptions will arise from basing a diagnosis on stomach examinations alone, or on too infrequent examinations; or on examinations conducted without rules and without thought.

The stomach-tube is of the greatest importance in the matter of diagnosis; in treatment it is often useless and sometimes pernicious. Nevertheless it is at times a therapeutic agent of great efficiency and cannot be replaced by any other measure in poisoning cases, gastrectasis, before operation in obstruction, in some cases of intractable vomiting, in catarrhal gastritis and, in general, for the relief of an irritable gastric mucosa.

It should be much more generally employed than it is as a routine in general examinations, but, as in other physical methods of examination, the results will depend on the expertness and thoughtfulness of the examiner.

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X-RAY EVIDENCE IN GASTRIC CANCER*

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The treatment of cancer of the stomach rests in the hands of the surgeon, but the diagnosis rests in the brain of the physician. He is the first to see the case. If he fails to make an early diagnosis the surgeon can give no hope. And yet early diagnosis is often impossible even with the advantages of experience and the laboratory. For these reasons I hope to interest the internists of this Section in a comparatively new factor in the early diagnosis of cancer of the stomach. This factor is the *x*-ray plate.

The use of the *x*-ray in diseases of the alimentary tube depends on the fact that the inside of the stomach or intestine, when coated with a salt of bismuth, casts its shadow on plate or screen. In such shadows lie the *x*-ray evidence of gastric disease. These skiagraphs are not self-interpreting. A known and constant technic is a condition precedent. In addition to an *x*-ray training we must bring to bear the physical examination of the case, the laboratory findings, the inspection through the incision at operation, and the investigations of the post-mortem. The larger the record of a collective experience of many workers the more exact and comprehensive will be the interpretation of skiagraphs.

This illustrates the fact that we are in the primitive stage of the *x*-ray diagnosis of gastric cancer, and justifies me in assembling the diagnostic factors deducible from the *x*-ray image of the inner wall of the stomach, so as to consider those attributable to cancer.

The diagnostic factors presented are:

1. Size.
2. Form.
3. Position.
4. Clearance.
5. Location of pain-marker.

The size of the stomach must be judged by the size of the patient. The form of the stomach, which is subject to change without notice, may nevertheless clearly be designated as:

1. Normal stomach.
2. Tubular stomach.
3. Globular stomach.
4. Drain-trap stomach.
5. Deformed stomach.
    a. Indentation stomach.
        (1) From spleen or other adjacent organ.
        (2) From tumor in stomach wall.
        (3) From tumor outside stomach.
    b. Adherent stomach.
    c. Contractured stomach.
        (1) Forming pucker in body of stomach.
        (2) Forming hour-glass contraction.
        (3) Forming partial or complete stenosis at pylorus.

The position of the stomach may be normal, or may be displaced as a whole, or may suffer a displacement of certain parts, namely, the fundus, the greater curvature and the pylorus with its antrum.

If the center of pain, or of tenderness on pressure, be marked by a lead letter (P) fastened to the skin by adhesive plaster, we may find the demonstration of this displacement of the stomach or its parts, with reference to the lead letter as depicted on the *x*-ray plate, to be a matter of decisive importance. The stomach or its parts may extend to unexpected places. The lead marker, which we thought lay over the appendix, we may find to coincide with the pylorus; or, again, the lead marker, which we thought lay over the stomach, may lie over the pancreatic area, the stomach having prolapsed out of the way. Incidental to a stomach examination we may demonstrate the lead marker of pain or tenderness to coincide with the duodenum or some other portion of the small intestines, some part of the colon, or the spleen, liver, gall bladder, kidney, ureter or urinary bladder. But the position of the lead marker must not be implicitly relied on to localize the lesion. For example, a circumscribed abdominal pain may be due to a Pott's disease of the spine high up in the dorsal vertebræ, beyond the field of the stomach plate.

Our fourth factor, the clearance of the stomach or its power to empty its contents, depends on:

1. Position of greater curvature.
2. Position of pylorus.
3. Pyloric stenosis.
4. Pyloric insufficiency.
5. Hour-glass constriction.

An analysis of these diagnostic factors presented by stomach skiagraph shows that three out of five major factors may give information concerning gastric cancer. They are:

1. Form.
2. Location of lead marker.
3. Stomach clearance.

In the case of cancer the alterations of form are those of the indentation or contractured type of the deformed stomach. In the case of ulcer the alteration is confined to the contractured type. The indentation stomach is therefore the type distinctive of cancer. A benign growth would have to be excluded on other grounds.

The factor of stomach clearance is observed in the last plate. If bismuth remains an unusual time in the stomach, there may be a pyloric narrowing or an hour-glass contraction due to the scars of old sores or to indentations. Lastly, if the lead marker lies over a certain portion of the stomach and the case history shows the location of pain or tenderness to be constant, then we may add this fact to the other clinical data favoring cancer. By the same reasoning, if the marker lies over the duodenum we may suspect duodenal ulcer.

But the *x*-ray diagnostician must never judge a case from *x*-ray signs alone. He must possess himself of the entire clinical and laboratory records. The *x*-ray amplifies but does not supersede other means of diagnosis, although it often happens that the skiagraph supplies the missing premise of a diagnostic syllogism.

The problem of differential diagnosis may require a careful consideration of all available evidence in the case. When we find a deformed gastric outline we have to discriminate between an indentation from the pressure of other organs or growths; a local contraction of the stomach wall; an invasion of the stomach wall by a growth; and the presence of adhesions due to disease of contiguous organs. Also when we find low clearance and a globular form, and establish the fact of pyloric narrowing, we then have to discriminate between narrowing due to the scar tissue of ulcer; that due to growths in the walls of the antrum or pylorus; that due to pressure of growths or glands outside of the pylorus; and that due to binding of adhesions.

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

In order to make these discriminations we must study the stomach under normal conditions so as to be able to recognize a departure from normal outlines. The normal stomach is more vertical than horizontal and lies above the plane of the umbilicus. Laterally, the axis of the stomach is oblique to that of the trunk, the fundus lying to the back and the pylorus to the front, so that when the patient is placed horizontally on his back the stomach contents gravitate to the fundus and, when placed on his abdomen, to the pylorus. The fundus is in contact with the diaphragm above, the left lobe of the liver to the right, and the spleen to the left and back. The main body of the stomach lies posteriorly in contact with the tail of the pancreas, the left kidney and suprarenal. On the left side it lies in contact with the spleen, the splenic flexure of the colon, the transverse colon, and the descending colon. On the right it lies against the vertebral column and the abdominal vessels. The antrum pylori at the back lies against the pancreas, while the whole stomach in front lies against the abdominal wall. The displaced or dilated stomach may lie in contact with any and every organ in the abdominal cavity.

When we consider the contact relations of the stomach we see that a study of the indentations of the stomach walls may in different cases yield information concerning almost every abdominal organ.

Our technic must be adapted to these anatomical conditions. Air or bismuth within the stomach gives certain outlines. In actual practice by the bismuth method we have to do with the combination, since air or gas is always present to some extent. We must consider the following points:

Patient.
1. Position of body.
2. Degree of stomach distention
3. Contents of stomach.
4. Immobility.

Bismuth.
1. Kind of salt.
2. Quality.
3. How suspended.
4. How taken.
5. How distributed.

Time of day for exposure of plates.
1. Relation to meals.
2. Time elapsing between ingestion of bismuth and exposure of plate.
3. Number of plates and time between.

The patient may be in any position, but the best skiagraphs will be obtained by placing the patient horizontally, front down, on the plate.

Only by the horizontal position can we prevent the bismuth by its weight from deforming the true gastric outline. The preservation of the true gastric outline also depends on the degree of stomach distention and the nature of the stomach contents. The stomach should be empty to begin with and the distribution of bismuth should be such as to reveal most surely any indentations, contractures, or adhesions. This part of the technic must be an approximation because we can only approximate the size of the stomach preceding our x-ray plate.

Immobility of the patient may be obtained by having the breath held. Practical immobility of the stomach may be obtained by sufficiently rapid exposure, or by morphin. Morphin, however, destroys to a large extent the value of the second and third plates by interfering with the factor of stomach clearance and the intestinal distribution of the bismuth.

Nearly all of my stomach work since 1905, until two months ago, has been done with bismuth subnitrate. With the exposure of the final plate I have always given a full dose of Epsom salts. An average of three cases in a hundred, however, have shown some slight toxic symptoms consisting of faintness, cyanosis, slight pains and stiffness of the legs from ten to twenty-four hours after. With the Epsom salts following, I believe that bismuth subnitrate may be safely used. The subcarbonate, however, first suggested to me by Dr. Pfahler, gives equally good skiagraphs, and is free from the possibility of the decomposition of the nitrate radicle with the formation of poisonous nitrites.

The method of mixing the bismuth with some kind of foodstuff so as to fill the stomach does not meet our diagnostic requirements. The aim is not to fill the stomach, but to coat its walls; not to show a large bolus of food and bismuth, but to define stomach outlines. To this end the bismuth should be introduced into the stomach in the thinnest menstruum that can be swallowed. This is plain water.

The quantity of bismuth needed is, according to the size of the patient, from 40 to 100 gms. in from 250 to 500 c.c. of water. This is immediately distributed over the rough and furrowed mucosa of the stomach by placing the patient in the horizontal position, back down, on a swivel surgical chair or table, which is then tipped into the Trendelenburg position, head lowered, feet up. We may then slowly rotate the chair while the bismuth is settling upon the stomach lining, where it will be retained for a time which is more than ample for skiagraphic purposes. The patient is then directed to turn over via the left side, face down, without rising out of the horizontal, after which the chair is again tipped, head down, and rotated as before. From three to five minutes are sufficient for these maneuvers. The patient, now in the horizontal position, face down, arches the abdomen to allow a plate to be placed beneath. He then lies on the plate, care being taken to bring the arms forward so that the weight of the body is not supported by the elbows. A 14 by 17 plate should be placed so that the forward edge is on a line with the nipples. The tube should then be fixed, not closer than 50 cm. (or about 20 inches), over the center of the plate. The radial axis is then always in the center of the plate and need not be marked by plumb, as in my earlier plates.

If the preparations have been complete, including the previous fixing of a lead U in the umbilicus and a lead P over the center of the area of pain or tenderness, if such exist, then we shall be ready to turn on the x-ray in from five to fifteen minutes after giving the bismuth. The patient is directed to take a moderate breath and hold it as long as he can without moving in any way. This allows us from five to thirty seconds, according to the size of the patient, and ensures a serviceable negative in every case. The shorter the time the clearer-cut the negative. But all the time up to thirty seconds may be allowed which the apparatus requires.

The first plate (14 by 17) may be conveniently exposed in the morning after the test breakfast has been withdrawn for analysis. Then, an hour after the first plate, a second plate (10 by 12 or 8 by 10) should be exposed under a compression diaphragm so as to take in any area which the first plate shows as abnormal. If no such abnormality appears, then one should focus over the critical area within which lie the antrum pylori, the pylorus, the duodenum, the head of the pancreas and the common duct. Six hours after the first plate, or the time between two meals, a third plate (14 by 17) should be exposed. This will demonstrate stomach clearance, confirm gastric deformities, and show the intestinal distribution of the bismuth. If the first plate is exposed before dinner the third may be exposed before supper. After the first plate the meals should be eaten as usual.

As to the technic of coil, tube and plate, I would say only that skiagraphy of the alimentary tract by the bismuth method is hard-tissue skiagraphy, the bismuth areas often greatly exceeding the bones in density, as shown by stomach negatives.

The progress of the bismuth is often astonishingly rapid. In five minutes after the bismuth is taken a portion of the duodenum will commonly be coated. In fifteen minutes bismuth may be found in the jejunum, and not infrequently in coils of the ileum. In four hours the stomach may have emptied itself; and in four to six hours, the small intestines, by their vigorous peristalsis, may have passed the bismuth clearly and completely into the colon, where it may be distributed from the cecum to the sigmoid.

These points and each essential condition and factor mentioned in this paper are illustrated by seventy-two plates placed in observation frames in the Scientific Exhibit. Lack of time prevents me from demonstrating them on this platform. These are the best of several hundred plates taken by myself in the course of a private and consultation practice, and have been carefully labeled and described by typewritten sheets posted on the frames. I have been aided in the interpretation of each plate by my relation of physician to the patient, by a necessary familiarity with the clinical and laboratory findings, and by attendance on most of the cases for subsequent periods. When operation or autopsy has followed, such is indicated on the plate. This exhibit is arranged particularly for medical men who are not *x*-ray experts, because so many medical men, even some of national fame, seem strangely unaware of the possibilities of the *x*-ray plate.

I believe that sufficient stomach work has already been done by numerous *x*-ray operators in various parts of the world to demonstrate the incomparable value of the *x*-ray in cancer of the stomach as well as in a wide range of other affections of the alimentary tube. Medical men should study *x*-ray plates of their cases. It is no exaggeration to say that the *x*-ray plate and screen will give often more and better information than an exploratory operation. This is emphatically true in the case of gastric ulcer, but holds true in the main for gastric carcinoma. Where the diagnosis of malignant disease is not in doubt the *x*-ray should still be used, because few medical or surgical diagnoses are so exact and comprehensive that the skiagraph and screen may not extend or revise our knowledge.

In conclusion, I take pleasure in acknowledging my indebtedness to Dr. C. M. Spencer, my clinical assistant, for his very able service in this work.

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Teaching of Dermatology.—T. Caspar Gilchrist, in his presidential address before the American Dermatological Association, states that the teaching of dermatology of to-day and for the future means much harder work than formerly, as the dermatologist must not only convey his knowledge to the student by personal practical teaching, but must also advance the knowledge of our branch of medicine by investigation and experimental work, otherwise his horizon must inevitably grow narrower.—*Journal of Cutaneous Diseases.*

THE DETERMINATION OF TRYPSIN IN THE STOMACH CONTENTS AFTER OIL TEST MEALS *

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The experiments reported in the following paper are based on the work of Boldireff and Volhard. The former in experiments on dogs found that the introduction of oil into the stomach caused regurgitation of duodenal contents, in which the presence of pancreatic ferments could be demonstrated; the latter devised a new method for demonstrating the presence of trypsin and applied Boldireff's discovery to clinical uses.

A. OBJECTS, METHOD AND RESULTS IN GIVING OIL TEST MEALS

My first object was to substantiate the observations of others as to the ease and frequency with which duodenal contents might be obtained after the oil meal.

The second was to decide which of the methods proposed was best suited for detecting trypsin in the specimens secured.

The third was to discover what, if any, clinical value was to be attached to the findings thus obtained.

The oil meal as given, consisted of 100 to 200 c.c. of olive-oil or cottonseed-oil; in most cases this was given through a tube; occasionally the patients preferred to drink the oil. While the tube was in the stomach, before the oil was administered, any contents present were aspirated or washed out. In the case of a large dog, in which repeated attempts to obtain duodenal contents had failed, lavage with sodium bicarbonate solution, as well as the administration of magnesia, was tried without effect. In one-half to one hour, the oil was aspirated. In many cases a few cubic centimeters of whitish mucoid fluid, in addition to a small amount of oil, was all that could be recovered. In other cases a large amount of pale green or dark curdy green fluid, amounting in one case to as much as 250 c.c., was obtained. With this was a supernatant layer of unchanged oil and an intervening zone of soap-like emulsion. The tests were carried out in the separated white or green fluid without previous filtration.

The following is a summary of the oil test meals:

18 oil test meals were obtained from patients.
5 oil test meals were obtained from a large dog.
1 specimen was aspirated from the duodenum of a dog by intubation.
Twenty-four specimens in all were examined.
6 of these were of a light or dark green color.
18 were transparent, milky or in a very few cases brownish.
3 of the green specimens showed the presence of trypsin.
3 of the green specimens showed the absence of trypsin.
4 of the colorless specimens showed the presence of trypsin.
14 of the colorless specimens showed the absence of trypsin.

In addition four Ewald test meals, mostly green in color, were examined; one showed the presence of trypsin.

In practically all cases more or less fluid was obtained; frequently this was nothing more than a small amount of retained or possibly newly secreted gastric juice and mucus. It seemed to me, therefore, that the only criterion as to the character of the juice should be its color, indicating or not indicating the presence of bile, and its response to tests for ferments. A third factor might be the amount obtained. Judged by this standard, only nine out of the above eighteen tests on human beings can be considered successful. This differs widely from the results of a recent writer who was successful in 48 out of 50 cases. This disparity may be accounted for partly by my lack of experience, but more largely, as I shall point out, by his faulty controls. My conclusion, therefore, is that Boldireff's plan is superior to those previously suggested, but is by no means uniformly successful as several writers have intimated.

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

* From the William Pepper Laboratory of Clinical Medicine.

B. COMPARATIVE VALUE OF METTE, VOLHARD AND GROSS METHODS OF TESTING FOR TRYPSIN

Of the numerous methods proposed at various times for the estimation of pepsin and trypsin only two or three, which have been used for the purpose under consideration, will be considered. Most of the others are too complicated for clinical use, or else offer no advantages over those here discussed. The Mette method, as I have described it in several previous articles, was employed and needs no minute description, as it is now fully given in the text-books. In using it for trypsin the contents were usually diluted with decinormal sodium carbonate solution, thus affording the most favorable conditions for tryptic digestion. Particles of fibrin were placed in each dish to detect traces of digestion.

The detailed technic of the Volhard method may be omitted, but it is necessary to give an outline to explain the principle on which it is based. A strong casein solution of a definite strength and alkalinity is prepared. To a measured portion of this alkaline fluid a definite amount of neutralized duodenal juice is added, and digestion allowed to proceed at 37 C. for twenty-four hours or other fixed period; then a definite but excessive amount of normal hydrochloric acid is added and the precipitation of the casein brought about by sodium sulphate. The amount of precipitate is found to be in inverse ratio to the amount of ferment, and on filtration the acidity of the filtrate, as tested by titration with decinormal sodium hydrate solution, is found to be increased directly in proportion to the amount of ferment. A control is used in each case, the acidity of the control being subtracted from that of the specimen under examination. The exact directions for the preparation of the solution are appended.

The method of Gross, which is very similar to the one simultaneously devised by Fuld, also utilizes casein as the substratum for digestion. A solution of casein, 0.1 per cent., in 0.1 per cent. sodium carbonate solution is prepared and 10 c.c. decanted into each of several test-tubes. The trypsin solution serially diluted is added and the tubes incubated for twenty-four hours. At the end of that time 1 per cent. acetic acid solution is added to each of the tubes and the dilution noted in which cloudiness is still produced. If the casein is completely digested no cloud appears.

The tests were employed first with artificial trypsin or pancreatin solutions and, secondly, with the contents obtained by Boldireff's method. Previous work with the Mette method had convinced me that it was a good, though not delicate, qualitative test of artificial trypsin solutions. In testing duodenal contents, however, I was unable to obtain any positive results. Particles of fibrin were frequently added to the dishes and almost invariably showed digestion in cases in which Volhard was positive. By the Volhard method eighteen specimens obtained from patients or from dogs after the oil meals, as well as several specimens of feces and ordinary stomach contents, were tested. Numerous experiments were also made with artificial solutions. In almost all cases the minutest traces of trypsin were clearly indicated. In a number of instances in testing duodenal contents a marked disparity was noted between a water control as used by Volhard and others, and a control consisting of the boiled specimen to be tested. These differences, as shown in the accompanying tables, were sufficient to counter-balance the low figures obtained in many of the positive results reported by others. I was also unable to obtain any definite quantitative results; occasionally the titration showed acidities closely corresponding in relative amount to the comparative strength of the trypsin solutions employed, but in the majority of instances in which trypsin solutions of varying strength were simultaneously tested, the stronger solutions gave higher results, but the figures bore no definite relation to the concentration of the ferment. In some cases this correspondence in results may have been due to the fact that the weaker solution gave a maximum effect. My conclusion was that the Volhard test had little value as a quantitative method, but was a delicate and reliable qualitative method.

The Gross test seemed to be a delicate one, but, as its inventor states, it is not suited without modification for use in duodenal contents, as bile salts and other constituents give rise to a similar precipitate which is liable to cause confusion.

TABLE 1.—OIL TEST MEALS FROM PATIENTS*

Titrations made with decinormal sodium hydroxid solution. Phenolphthalein used as indicator. Results corrected for acidity of specimens. Temperature of thermostat 37 C.

1 (p. 82†). Gastrointestinal neurosis.	1 Control, Water 10 c.c.	2 Control, 10 c.c. of boiled specimen.	3 "Juice" 10 c.c.	4 "Juice" 5 c.c. Water 5 c.c.	Remarks.
Titration	11.2	14.4	16.0	14.4	Green color.
Less 2	....	....	14.4	14.4	Time 18 hours.
Increase in acidity.			1.6	0.0	Pepsin normal and trypsin absent by Mette.
2 (p. 92). Intestinal indigestion.	Same.	Same.	Same.	Same.	Remarks.
Titration	22.6	19.4	20.4	19.7	Green color.
Less 2	....	....	19.4	19.4	Time 24? hours.
Increase in acidity.			1.0	0.3	Pepsin present and trypsin absent by fibrin test.
3 (p. 64). Cancer of pancreas.	Same.	*Omitted.*	Same.	Same.	Remarks.
Titration	11.2	....	20.6	20.4	Green color.
Less 1	....	....	11.2	11.2	Time 16 hours.
Increase in acidity.			9.4	9.2	Control faulty.
4 (p. 72). Gastric ulcer.	Same.	Same as 1.	Same.	Same.	Remarks.
Titration	8.8	15.2	32.0	32.4	Green color.
Less 2	....	....	15.2	15.2	Time 8 hours.
Increase in acidity.			16.8	17.2	Pepsin normal and trypsin doubtful by Mette.
5 (p. 88). Cancer of stomach.	Same.	Same.	Same.	Same.	Remarks.
Titration	13.8	20.0	52.8	51.8	Green color.
Less 2	....	....	20.0	20.0	Time 24? hours.
Increase in acidity.			32.8	31.8	Temperature of incubator irregular. Pepsin and trypsin absent by Mette test.

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* This table shows a few typical cases. Nos. 1 and 2 may be regarded as negative, No. 3 shows a small amount of trypsin. Nos. 4 and 5 larger amounts. Water is shown not to be a sufficient control.

† The page numbers refer to laboratory note-book.

My inclination in the future would be to use the Mette method and a simplified Volhard test in a purely qualitative way to control each other. I would use mensuration in the former and titration in the latter only when the results were doubtful.

The accompanying examples (Tables 1, 2 and 3) from my note-book have been arranged in tabular form to illustrate (1) the details of the dilutions and calculations, as well as (2) the results obtained by different methods and by the use of natural and artificial trypsin solutions.

TABLE 2.—Comparative Tests by Three Methods, Using Commercial Pancreatin (Wyeth's) as Digestant

Solution and dilutions made with 0.1 per cent. sodium carbonate solution.

	1 Sod. carb.	2 Pancreatin.	3 Same	4 Same	5 Same	6 Same
Volhard. 10 c.c. in each.	0.1%	1.0%	0.5%	0.1%	0.05%	0.01%
Titration	18.0	71.2	72.0	63.0	57.0	28.6
Less 1		18.0	18.0	18.0	18.0	18.0
Decrease in acidity.		53.2	54.0	45.0	39.0	10.6
Gross 1 c.c. in 10 c.c. of casein solution. After addition of 1% acetic.	Milky cloud.	No cloud.	No cloud.	No cloud.	No cloud.	Faint cloud; in 0.005 % distinct *cloud.*
Mette and fibrin. 5 c.c. Mette tubes fibrin flakes.	*Trace* Dissolved.	*Trace* Dissolved.	Faint Trace Partially? dissolved.	Faint Trace Neg.	Neg. Neg.	Neg. Neg.

TABLE 3.—Merck's Trypsin 1 per Cent Tested by Volhard's Method*

	10 c.c. Water.	10 c.c. Solution.	10 c.c. Solution.	5 c.c. S. 5 c.c. W.
Titration	17.6	63.2	66.4	68.0
Less 1	....	17.6	17.6	17.6
Decrease in acid....... Time 3 hours.	....	46.6	48.8	50.4

Let us now pass to the clinical side of the question. My cases are too few in number to be of much value, so that after a brief outline of my results, I shall review the valuable or suggestive findings of others. As stated above, I have excluded from consideration all cases in which neither bile nor trypsin was present. This unfortunately limits the usefulness of the test, but seems to be unavoidable.

In four cases some affection of the pancreas was present or suspected.

Case 1.—In the first patient, the diagnosis of cancer of the pancreas was made at operation. Previous to operation 50 c.c. of green fluid had been obtained *after an oil test meal.* Volhard's test gave an increase in acidity of 9.4. Unfortunately water only was used as a control. *Trypsin was probably diminished in amount or possibly absent.*

Case 2.—The second case was one of cancer of the prostate with secondary growths. After an oil test meal, 3 c.c. of white fluid were obtained. The fibrin test for trypsin was positive; the Mette test was negative. At autopsy a secondary growth was found in the pancreas with necrosis of the tail of that organ and subdiaphragmatic abscess.

Case 3.—The third case presented indefinite intestinal symptoms which were said to have been relieved by pancreatin. The case was considered to be a gastrointestinal neurosis. Two oil test meals were examined, one specimen was white and gave a *low positive result* by Volhard (7.0); the other was green and contained no trypsin. The latter result seemed to be the more trustworthy.

Case 4.—The fourth case was referred to Dr. Edsall as a probable case of pancreatic disease, but he could not confirm this opinion. His diagnosis was intestinal indigestion. After an oil test meal 45 c.c. of greenish fluid was aspirated which proved to be free from trypsin by Volhard's test. In these four cases the method seemed not only to give no assistance in the diagnosis, but even to be more or less inconsistent with the clinical findings.

Cases 5 and 6.—In two cases of cancer of the stomach, strongly positive results were obtained by the Volhard test; in the first 32.8, in the second 29.7. In neither case was there any pyloric obstruction since in one the orifices were not involved, while in the other a partial gastrectomy had been performed. It has been suggested that there is a vicarious digestion in the stomach by means of trypsin in cases of impaired digestion. Strange to say, however, there was no reduction of the gastric activity in either of these cases.

The three remaining cases show nothing of interest and may be given in Table 4.

TABLE 4.—Oil Test Meal and Volhard's Test in Three Cases

Case.	Diag.	Quantity.	Color.	Volhard reading.
7	Chronic gastritis, with anacidity.	Small amt.	White.	4.0 (control water).
8	Hyperacid gastritis.	60 c.c.	Clear green.	0.0
9	Gastric ulcer.	250 c.c.	Green.	16.8

Oil juice was found active by Volhard in 9 out of 11, by Faubel in 23 out of 37, by Lewinski in 19 out of 27, by Molnár in 48 out of 50 cases. Boldireff, in a dog, was able to demonstrate the presence of trypsin before tying, and its absence after tying the pancreatic duct. Hemmeter and Lewinski found trypsin absent in the duodenal contents in cases of obstruction of the bile duct due to stone. Volhard, in a case of pancreatic diabetes, was able to verify the diagnosis of atrophy of the pancreas. He also found trypsin in two cases and was thus able to exclude pancreatic disease, which had been suspected. In 22 cases of achylia he missed trypsin only once. He found the same to be true of subacidity, and believes that this offers a plausible explanation of the good peptonization observed in these cases.

CONCLUSIONS

1. The duodenal contents may frequently be obtained after the oil test meal, though sometimes there is doubt as to the character of the fluid aspirated.

2. On this account it may be possible to exclude atrophy of the pancreas, but only under very unusual conditions can we demonstrate its presence. In a number of diseases the examination has yielded suggestive results.

3. The observation of Boldireff is of more interest from the point of view of pathologic physiology than of diagnosis, for example, in gastric ulcer and in achylia.

4. The casein method of Volhard is a delicate qualitative test for trypsin, but for this purpose needs simplification.

5. The regurgitation of the alkaline intestinal juice induced by oil may explain the therapeutic value of the latter in some cases of hyperacidity.

Finally, I desire to express my thanks to Dr. Robert G. Torrey for aid in performing the tests.

REVIEW OF LITERATURE

Boas: Centralbl. f. klin. Med., 1889, No. 6, x, 97; Ztschr. f. klin Med., 1890, xvii, 155.
Tschlenoff: Cor.-Bl. f. schwerz. Aerzte, 1889, No. 6, xix, 161.

Boas described the first systematic method for obtaining the duodenal contents. His plan was to massage the abdomen in the region of the gall-bladder and left lobe of the liver and afterward to aspirate any fluid that might have been forced into the stomach. In about fifty cases he obtained active intestinal juice in which he was able to demonstrate amylolytic, lipolytic and proteolytic ferments. He states that the tryptic action of the pancreatic secretion in weak acid or alkaline solutions is the only decisive test. He gives a complete description of the duodenal contents, which holds good for the fluid obtained by the oil method.

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* Many similar tests were made which agreed substantially with those given above.

Tschlenoff was able to obtain intestinal juice in five out of seven patients by the Boas method.

Hemmeter: Arch. f. Verdauungskr., ii, 85.
Kuhn: München. med. Wchnschr., 1896, No. 29, p. 674.

Hemmeter asserted that he was the first to introduce a methodical procedure for obtaining the duodenal contents by intubation of the duodenum. Kuhn's instrument is much simpler and better than Hemmeter's but either one requires too much technical skill to admit of its general use in clinical diagnosis.

Einhorn: New York Med. Jour., 1908, No. 25, lxxxvii, 1179.

Einhorn has modified his "bucket" for the purpose of obtaining the contents of the duodenum for examination.

Goldschmidt: Deutsch. med. Wchnschr., 1909, No. 12, xxxv, 522.
Gross: Ibid, 1909, No. 16, xxxv, 706.

Goldschmidt and Gross, using the latter's method for detecting trypsin, have recently discovered this ferment in the feces of all normal persons examined. This does not agree with the observations of previous writers, but if confirmed will render the use of oil test meals quite superfluous.

Boldireff: Zentralbl. f. Physiol., 1904, No. 15, xviii, 457; Centralbl. f. Physiol. u. Path. d. Stoffwechs., 1908; No. 6, viii; Arch. f. d. ges. Physiol., 1907, Part 1, cxxi, 13.

The following is a condensation of Boldireff's most important conclusions. After fatty food, in cases of excessive acidity, and after long-continued fasting, a mixture of the pancreatic, intestinal and hepatic secretions pours into the stomach. This fact is utilized to obtain pancreatic juice and bile for examination, and must also be taken into account in tests to determine the acidity, the ferments and the motility of the stomach. Boldireff believes that when fatty food is taken gastric digestion is carried on largely by the ferments of the pancreas. He also states that none of the hypotheses which have been proposed to explain the fact that the stomach does not digest itself take the reflux of pancreatic juice into account. He thus hints at a new theory for the explanation of gastric ulcer. Hyperacidity does not increase the peptic power of pepsin but does favor regurgitation of pancreatic ferments.

Volhard: München. med. Wchnschr., 1907, No. 9, liv, 403.
Faubel: Beitr. z. chem. Physiol. u. Path. (Hoffmeister), 1907, x, 35.
Löhlein: Beitr. z. chem. Physiol. u. Path. (Hoffmeister), 1906, vii, 120.
Molnár: Ztschr. f. klin. Med., 1909, Parts 1-3, lxvii, 188.

Volhard was the first to employ Boldireff's plan for clinical purposes. For testing the "oil juice" he modified his pepsin method. The casein solution required is prepared as follows:

One hundred gm. of finely granular casein are added to 1 liter of distilled water treated with 80 c.c. of normal sodium hydroxid and made up to 2,000 c.c. with chloroform water. The mixture is slowly warmed on the water bath, with frequent shaking, till all the casein is dissolved, and then quickly raised to 85 or 90 C. to destroy bacteria and ferments. After cooling, a layer of toluol is added to prevent access of bacteria.

An individual test is carried out as follows:

One hundred c.c. of casein solution are placed in a flask marked at 300 and 400 c.c.; chloroform water is added to the mark 300 and then an accurately measured amount of trypsin solution (5 or 10 c.c.) previously neutralized. (The acidity may, however, be noted in advance and the necessary corrections made after the final titration.)

Control flasks are prepared in a similar manner, distilled water taking the place of trypsin solution. After incubation for a definite period of time, 11 c.c. of normal hydrochloric acid is added to each flask and then complete precipitation brought about by filling the flasks to the 400 c.c. mark with 20 per cent. sodium sulphate solution. After complete filtration 200 c.c. of the filtrate from each flask is titrated with decinormal sodium hydroxid solution, using phenolphthalein as an indicator. The acidity of the control is subtracted from that of the ferment containing solutions. In my tests the only modification of this method was in the use of a different preparation of casein from that recommended by Volhard (not obtainable in this country) and in the use of half the quantities recommended by him (Merck's Casein [Hammarsten] was used). My results were multiplied by two so as to compare with the results of other writers. Volhard and his followers found that trypsin as tested by this method did not follow the Schütz-Borrisow law.

Gross: Arch. f. exper. Path. u. Pharmakol., 1907, Parts 1-2, lviii, 157.
Lewinski: Deutsch. med. Wchnschr., 1908, No. 37, xxxiv.

Lewinski used the oil method in 27 cases, using the Gross test to detect the presence of trypsin. At first he was unable to obtain trypsin in hyperacidity cases, but afterward by giving half a teaspoonful of magnesia before the oil and again in twenty minutes, he was uniformly successful. He thinks that failure to obtain active juice shows pancreatic insufficiency or mechanical interference with the passage of the pancreatic secretion into the stomach.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. STOCKTON, CRANE AND FARR

Dr. G. E. Pfahler, Philadelphia: We know so little that is definite in the diagnosis of cancer of the stomach that everything in advance in this line must be welcomed by all. If the members of the section will examine the plates which Dr. Crane has so carefully prepared, and which may be seen in the scientific exhibit, they will be convinced that the *x*-ray is not an illusion, but gives evidences of cancer. I have seen 35 cases of carcinoma of the stomach; some came to autopsy, while in the others the patients came to operation. In the majority there was no palpable tumor present. In the cases in which there was a palpable tumor it had to be differentiated from tumors of some other part of the intestinal tract. Very valuable evidence is given in this line by the *x*-ray. I think that the sooner the medical man gets in mind the actual and true position of the normal stomach, and forgets what has been considered as classical, the sooner will we enter lines of progress. It is hard to convince a man who is not familiar with the *x*-ray of its value in these cases. As a matter of fact, only one-half the evidence is obtained by the *x*-ray plate; the other half is obtained on the flouroscopic screen. Movements, such as the peristaltic movements, are not revealed on the plates, and I think these form the basis of a positive diagnosis, an early diagnosis. A little induration in the stomach walls, especially if occupying the lesser or greater curvature, causes a change in the wave, but this evidence cannot be obtained on the plate. Of course, a study of the plate by an experienced man is important.

I believe that unless we apply the pain-marker over the seat of pain and move the stomach, to determine that the point of pain moves with the stomach, it is of not much value. I think evidence found at autopsy will bear me out in this.

One must examine these patients in at least two positions, both the vertical and the recumbent. If in the vertical position with proper manipulation, moving the patient sideways, working on either side of the spinal column, will bring out all the evidence that is possible. I have been using bismuth subcarbonate and find it entirely satisfactory. In an examination of 365 patients for conditions affecting the gastrointestinal tract, in whom I used from 2 to 3 ounces of bismuth subcarbonate, I found no toxic symptoms, or a single symptom that could be traced to the use of the bismuth. I think this is a perfectly safe method. The only objections I can see are that too much time and patience are required and, also, one is put to a considerable expense. But these objections can be overcome.

Dr. A. W. Crane, Kalamazoo, Mich: One caution occurred to me in drawing conclusions from stomach contents obtained at different levels by the stomach tube. This is illustrated by one *x*-ray plate in the scientific exhibit on Young's Pier taken with the stomach tube in place in the stomach. It may there be seen that the cardiac orifice is on the side and not on top of the stomach. This orifice passes into the stomach toward the upper part of the great curvature. In many cases the end of the tube stops there, as shown by the skiagraph. If a further introduction of the tube is attempted the tube bends; the point does not descend. This is true in a certain proportion of the cases. In this particular plate it is determined beyond a doubt. In many cases in which the stomach contains but little, the contents can be obtained by placing the patient on his back in nearly a horizontal position; then the stomach contents flow upward to the fundus and can be easily drawn off with the tube. Again, in the so-called hour-glass stomachs, when there is a constriction between the upper and lower sacs, the opening is generally too small to permit the passage of the tube. In these cases the stomach contents are obtained from the upper sac, and would not differ in any respect from the contents of an esophageal diverticulum. I doubt if any man can tell whether the end of the tube is in the upper sac of an hour-glass stomach in which the constriction is high up, or in a diverticulum. The attempted diagnosis of such conditions with a stomach tube is open to serious objections. The *x*-ray plate is necessary.

Dr. Judson Daland, Philadelphia: During the past three years I have seen a number of cases of gastric tumors studied by *x*-ray, and it seems to me from the experience gained that so far as gastric carcinoma is concerned the entire work is in its very beginning. At the same time, we must acknowledge that the *x*-ray does aid us materially and in many directions. Often it makes clear the position of the tumor, whether gastric or not. It seems to me that it is especially important to be able to determine the peristaltic waves, if they can be plainly and distinctly seen. I believe that the fluoroscope has a value of more than one-half that of the skiagram. By the use of the screen one obtains, on the whole, more information than can be obtained by the skiagram. However, both methods must be employed. The use of bismuth in *x*-ray work is a welcome addition to diagnosis, and all the work that is to be done should be done with as much enthusiasm as has been shown in the past. By paying more attention to the work more definite signs than we now possess will be brought out. We need much more *x*-ray evidence than we now possess, and we must acknowledge that we have little evidence of carcinoma of the stomach, particularly in the early stages, when a diagnosis is most important. The use of the subnitrate of bismuth in doses of from 2 to 3 ounces for *x*-ray work I have seen give trouble which was of no particular importance; there would probably be a gastrointestinal irritation for two or three days and then it would pass away. Its occurrence was rather unusual and therefore did not constitute a bar to the further use of the *x*-ray. I think the subcarbonate is to be preferred to the subnitrate of bismuth.

Dr. Allen A. Jones, Buffalo: It is misleading when one attempts to judge the position and size of the stomach by means of the stomach tube; one cannot say that he is dealing with a normal stomach, a stomach in a normal position and of normal size, when the tube is used for this purpose. The contents may come through the stomach tube anywhere from nineteen inches or lower, even to twenty-six inches in normal cases. The contents may be obtained from the fundus or from the pyloric extremity. I was interested in Dr. Crane's statement in regard to hour-glass contraction of the stomach; he found it was impossible to differentiate between the contents obtained from the fundus and that obtained from a diverticulum of the esophagus, from a dilated esophagus, or from a stenosis from any cause. This emphasizes the extreme importance of the pyloric region of the stomach. Unless there is a proper mixture of gastric juice with the food at the pyloric extremity of the stomach, the stomach content does not assume normal characters. One point that Dr. Stockton mentioned was of considerable interest; this was the condition of the emptying function of the stomach with achylia gastrica. Recently considerable interest and significance has been attached to the chemistry in the duodenum and the pyloric closing and opening. It has been taught that, in normal digestion, when the duodenal contents reach an acid point, that is, a certain degree of acidity, a reflex action occurs which results in the closure of the pylorus, and no more contents are allowed to pass on until that which is already present is neutralized and has probably passed down further in the duodenum. If that is true, theoretically the passage of the gastric contents must be much hurried in achylia gastrica. But clinically such is not the case. We frequently find the contents retained in the stomach as long as would obtain in normal digestion. These are the cases in which we are apt to have symptoms of achylia gastrica. Peristalsis is, after all, the most effective measure, or means, of emptying the stomach contents into the duodenum, provided there is no pyloric stenosis and regardless of the fact that there is a low gastric acidity. On the contrary, however, it is in achylia gastrica that many marked cases of pyloric insufficiency and hurried emptying are observed.

Dr. John A. Lichty, Pittsburg: At the risk of being considered a psychiatrist, I wish to call attention to the effect of the mind or nervous system on these patients in whom we think it necessary to use a stomach tube. I believe that in the first days that the stomach tube is used the findings are of very little value, especially if the patient is a nervous one. If you tell the patient that you will pass the stomach tube on him next day he will worry all night about it, wondering how the stomach tube is going to feel. It certainly does have some effect on the digestive secretions, so much so in fact that the findings are of little value. I have also proved this in dogs. In our experiments on dogs we found that the dogs became fond of their keepers and the keepers could pass the stomach tube without any difficulty whatever; in these cases the stomach contents were found to be constant and normal. But one day one of the students asked me to let him go down and assist the janitor. All the dogs then had either diarrhea or vomited. This influence of the nervous system is not more so in dogs than it is in human beings. I wish to emphasize a point that Dr. Jones has mentioned in regard to the use of the *x*-ray, that is, the *x*-ray findings. Unless the stomach tube is passed up toward the pylorus the secretion withdrawn is not going to give a definite idea of the gastric secretion; one cannot always be sure of it. However, if the patient takes the tube nicely and easily, the physician then can rest assured that normal gastric secretion has been obtained. In spite of all this, I doubt whether the findings are always correct and that we can always make a correct interpretation of the findings. In those cases in which we have a definite clinical history we should disregard the gastric findings if they do not agree with the history. One should study the clinical history as much or more than the gastric findings.

Dr. Henry R. Harrower, Chicago: I believe that there is a possibility of mistake regarding the finding of the Oppler-Boas bacillus which the text-books lead us to believe is pathognomonic of gastric carcinoma. I have been misled in my brief experience by finding them in a number of gastric analyses; they were undoubtedly Oppler-Boas bacilli, but no malignancy was associated with them at all. At least two years have passed in one case, and this patient is not suffering from any gastric disturbance whatever. I have in mind a man who was suffering from some serious stomach disorder which was diagnosed as cancer. He vomited practically everything that passed into the stomach and was dying of starvation. I made a careful examination of the gastric contents and found a large number of what I believe to be Oppler-Boas bacilli. I think these bacilli can be easily recognized after one has seen them a few times. This patient was treated with ordinary digestants and eventually gained seventy pounds; in a year he was perfectly well. The Oppler-Boas bacillus is not pathognomonic of gastric carcinoma and this should be emphasized more, and the statements made in some text-books should be changed.

Dr. John N. Upshur, Richmond, Va.: I do not think that there is a more interesting subject than the study of stomach troubles. I am satisfied that the best men are sometimes in error as a result of their conclusions the result of analysis of gastric contents. If they could find it possible to be at both ends of the tube at the same time, that is, be the patient as well as doctor. I was one of those unfortunate people who had serious stomach trouble. I consulted several stomach specialists, who studied my case carefully. But I found from my own experience that my trouble was a neurasthenic one; it was a dilatation of the stomach of five inches, the result of a deficient motility as the result of a nervous breakdown. Four years later a specialist, who was thoroughly competent, told me that I had no dilatation at all. Now an exceedingly interesting thing to me was the use of the stomach tube. I am sure that I passed the stomach tube on myself at least 2,000 times. For seven years it was impossible for me to have a quiet night and be fit to work on the following day unless I used one gallon of sterilized water before retiring. The interesting feature in my case was that the digestive disturbance always came at the end of the day, when I was tired, mentally and physically. I am satisfied that the benefit, a decided benefit, arose from the use of the tube by causing a stimulation of the stomach with the sterilized water as a massage. The water was used at a temperature that was comfortable. There was an improvement in the motility of the stomach caused by the stimulation of the lavage together with long continued use of strychnin. I have not used the stomach tube for eighteen months and I am now in better physical condition than I have been in ten years and can do as much work as a young man can. What I wish to emphasize is that the best men are apt to make mistakes unless they can put themselves at both ends of the tube at the same time, at one end as the doctor, at the other as the patient; then they can arrive at some definite conclusion.

Dr. C. Urban Smith, Baltimore: I agree with the statement that the presence of the Boas-Oppler bacillus is not positive of carcinoma of the stomach. From what has been expressed here to-day one would infer that its presence was of positive diagnostic value, but we frequently find the bacillus in benign conditions. There is no doubt but that the Gram-positive finding of the bacillus in the feces is a valuable link in establishing a positive chain of evidence. In regard to the withdrawing of the stomach contents, and the statement that all the contents are rarely obtained by the ordinary methods, I wish to say that I find the expression method which is used largely in Germany is probably the best and simplest method to completely empty the stomach when properly performed, but requires a certain amount of practice and experience.

Dr. Frank Smithies, Ann Arbor, Mich.: Dr. Stockton should be praised for the complete résumé that he has given us. It seems to me that a fact not strongly emphasized should be mentioned. In the examination of stomachs the tube is frequently passed without sufficient attention being given to the state of the patient's mouth and teeth. Before the tube is passed it is well to have thorough cleansing of the teeth, mouth and throat. I recently had an experience which strongly impressed this on me. A specimen supposed to be Oppler-Boas bacillus was sent to me. It turned out to be leptothrix from a dirty mouth. I think that greater stress should be laid on frequent examinations of the gastric secretions and contents. Outside of institutions it is common to have a diagnosis offered a patient, based on but one stomach examination. As Dr. Lichty has pointed out, this amounts to but little unless the findings are positive ones, as, for example, the contents showing atypical cells, bacilli, etc., at this examination. With respect to the x-ray evidences in the diagnosis of cancer of the stomach, I must frankly admit that "I am from Missouri." From a somewhat careful examination of the plates submitted, I must say that I see little that would lead one to differentiate between early cancer or ulcer. And it must be remembered that it is in the early cases that we are justified in recommending refinements of diagnosis. A study of the abdomen with the aid of a fluoroscope frequently tells us important things respecting gastric and intestinal motility. But I fail to see that the x-ray offers any more information or more exact information than one can gain from careful examination with the aid of the stomach tube at appropriate sittings. And it should be emphasized that the stomach tube is always at hand.

Dr. Alexander Lambert, New York: Has Dr. Crane noticed in the skiagraphs of cancer of the stomach any relation between the pain described by the patient and the tenderness as elicited by the examination? As we know, the abdominal viscera refers pain to the abdominal wall. Has he drawn any conclusions; is there any relationship between the place of pain, as described by the patients, and the seat of the lesion as elicited by x-ray examination in cases of gastric carcinoma?

Dr. Philip King Brown, San Francisco: It is not an easy matter to differentiate the Boas-Oppler bacilli, and it cannot be done positively by simple staining methods. There are two definite types of organisms closely resembling the Boas-Oppler bacilli, and found commonly in stomach contents and stool. One is not uniformly positive with the Gram stain and has the same morphology as the colon group; Schmidt calls it the pseudocolon type. The other is very difficult to differentiate from the Boas-Oppler bacillus in stained specimens, except that it is slightly larger and thicker, and appears in long chains in the stool. It is also Gram-positive. What Dr. Smith has said is true; but be certain you are getting the Oppler-Boas bacillus before telling the patient that he has cancer.

Dr. Charles G. Stockton, Buffalo: Hour-glass stomachs are not seen frequently; it is not a common condition. A stomach tube could not pass through such a constriction readily, although I have done it in two cases. I feel convinced that the statements I have made will stand, with some exceptions of course. What Dr. Jones has stated in regard to the distance of the tube is perfectly true. Dr. Lichty's statement regarding the mental impression on the gastric secretions is correct and I am glad that he emphasized it as he did. The conclusions drawn regarding the stomach condition from one or two examinations are often misleading and throw the practice into disrepute. As to the Oppler-Boas bacilli, I think what has been said is true, but it has been said more strongly than I would say it. These bacilli are found in conditions not cancerous, but not in such abundance or regularity that I imagine one would believe from hearing what has been said. They are not at all pathognomonic of cancer. But when they are found in abundance they certainly have a diagnostic bearing, especially when taken in connection with other findings. Their presence does not stand alone and by itself in the diagnosis of cancer; this has never been claimed for them.

Dr. A. W. Crane, Kalamazoo, Mich.: If I gave the impression that the x-ray was an infallible means of diagnosticating cancer of the stomach, it was a mistake; it is simply one added factor to the other methods we have. To make plates is comparatively easy, but to interpret them requires understanding and training. To recapitulate briefly, the x-ray evidence of cancer of the stomach lies in the deformity of the normal outlines of the stomach. Ulcers or the scars of ulcers give contractures, while cancer gives an indentation of the stomach-wall. These distinctions are illustrated by many plates in the scientific exhibit. I should like to ask that the medical men give more attention to what the x-ray men in this country have to show them. They will find something in this method of diagnosis applied to the stomach.

The Changes in the Glandular Epithelium of the Uterine Mucosa in the Intermenstrual and Premenstrual Periods.—Material for the investigation was obtained from fifty-seven normal women whose menses were regular and abundant. The specimens were fixed in Zenker, Flemming and alcohol, and stained with safranin, hematoxylin and eosin, van Gieson and mucicarmin. From his histologic observations, R. Schröder (Inaug. Diss., University of Rostock, 1909), draws the following conclusions: The glandular epithelium of the uterine mucous membrane exhibits, eleven days after the beginning of menstruation, peculiar substances in the protoplasm of the cell, which have no affinity for staining reagents. These first make their appearance in the form of very small globules, which then grow larger and ultimately break through the cell wall and escape into the lumen of the gland. Along with these changes another substance makes its appearance in the glandular epithelium. It is characterized by its marked affinity for hematoxylin, and is first seen at the periphery of the cell. Soon the entire cell is filled and the stainable substance is next found in the lumen. It is thought that the glandular epithelium of the uterus is at all times, or at practically all times, capable of secreting mucus. The above changes, in all probability, represent different stages in the secretion of the peculiar uterine mucus.

THORACIC SURGERY *

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While fully appreciating the distinction conferred on me by your call to read a paper before this meeting on the present state of thoracic surgery, I realize that the prescribed time limit demands a concise handling of this subject. My assistant, Dr. Sauerbruch, was enabled to tell you last year at Chicago of his own ingenious studies and experiences, so that I can briefly dismiss the details of the method of operating under positive and negative pressure.

The surgery of the lung and the heart, as well as of the mediastinum, the diaphragm and the esophagus, are entitled to the greatest interest and attention, the outcome being governed by the manner of surgical interference. All these fields accordingly become criteria of eminent rank for the quality of our technic.

Surgical intervention on the affections of the lung may be classified under four different headings:

I. Intrapulmonary interference with diseased foci.

II. Influencing of pulmonary affections by way of the pleura, through compression of the lung.

III. Operative procedures on the thoracic wall, for the mechanical influencing of the pulmonary function, thereby reacting on pathologic processes in the lung.

IV. Operative treatment of the diseases of the thoracic wall itself, in as far as this leads to the exposure of the lung.

I shall say only a few words in regard to the management of pleural empyema later on.

I. INTRAPULMONARY INTERFERENCE WITH DISEASED FOCI

Simple intercostal incision is almost invariably the procedure of election for penetrating into the lung. Under employment of the differential pressure method, it affords complete information concerning the existing condition in the lung, and serves, therefore, as a sort of exploratory incision. With the lung open to inspection, and with control of the pneumothorax, the organ may be very completely palpated in all its parts; moreover, by artificially changing the pulmonary circulation, through variations of the pressure, the differences in color of healthy and diseased tissue may further be accentuated, and in the same way the lung may be put on the stretch or caused to relax. In the pressure-difference chamber operations are readily performed within fluctuations of 3 to 8 mm. mercury without endangering the patient's life or running the risk of pneumothorax. Hence, this procedure at the present day is almost a necessary requisite for exact anatomic planning and judicious conduct of the operation. In the treatment of wounds of the lung, as well as in all aseptic interventions on the organ, for the extirpation of tumors of the lung or of the chest wall, it greatly facilitates the work of the operator.

The dangers of pneumothorax for the circulation and respiration are lessened, it is true, by its gradual development, so that the affected lung segments may be drawn out and operated on, under tamponing of the remaining pleural space. But just as the risk of infection, in subsequent operative interference, is certainly increased by the preliminary application of pneumothorax (Dollinger), through revolutionizing of the lymphatic circulation in the pleura, we likewise add to the danger when we operate in the presence of pneumothorax, or when we close wounds before the pneumothorax has been entirely removed. Infection represents the most serious danger of all endothoracic operations, and whatever serves to prevent its occurrence becomes a part of the indispensable outfit of the operator.

The intercostal incision is sufficient, as a rule, even for extensive foci of disease or injury, whereas the removal of a considerable portion of one or two of the neighboring ribs is almost exclusively reserved for cases of gangrene or abscess. In lung injuries we aim at closing the wound by direct suture (Garré), if possible, perhaps after trimming the margins, where these are ragged or soiled (Fig. 1). The lung is then dropped back into the thoracic cavity, and this is closed with sutures. I recommend either the inverted suture (Fig. 1, a, b, c) or the penetrating suture (Fig. 1, d and e) for suturing the lung, silk serving as suture material. Abscess and gangrene of the lung still require suturing of the diseased segment to the thoracic wall, opening the pathologic focus in the same or in another time. Particularly in the case of injuries, the discovery of small wounds is greatly facilitated by the differential pressure method; the artificial production of circulatory changes affording reliable guides as to the source of the hemorrhage.

With special reference to tumors of the lung, the sum total of our clinical experience is as yet far too small for the outlining of the general technic. We know, however, that large segments of a lobe, or even an entire lobe, may be removed, if necessary, as has been shown by animal experimentation and by clinical experience (Heidenhain, Lenhartz, Krause, Garré). The diseased segment of lung is clamped off and then excised well into healthy tissue, under successive hemostasis with the customary measures, partly by direct ligature, partly by acupuncture. It is astonishing how easily hemostasis in the lung may be obtained. The problem confronting our technic is rather the closure of the bronchi in a given case. Bronchial segments devoid of cartilage may be freed from their mucosa (see instrument, Fig. 2), and then closed by direct ligature and acupuncture. But as soon as the cartilaginous area of the bronchi is reached, our technic is still unreliable, and it is not yet decided how often the opening of these bronchi will necessitate a partially open treatment of the wounded lung area. It is then advisable to reduce as far as possible the size of the pulmonary wound by suture, all but the large bronchial lumen, keeping the bronchus open at first toward the outside, by fixing the lung to the chest wall. At the German Surgical Congress[1] in 1907 I have shown the point in the bronchi where any lung amputation must stop, on account of the impossibility of definite bronchial closure, and the grave danger for the pulmonary plexuses of the vagus nerves. The limit of operability is reached in this region. Lenhartz employed a procedure in two stages: first, firmly constricting the lobe at its base with an elastic ligature, following this ten days later by secondary ablation of the ligated pulmonary segment.

I take advantage of the opportunity to show pictures of my instruments for operating on the lungs (Figs. 3 to 6) as well as a picture of my operating table for this work (Figs. 7 and 8). At the same time I wish to point out especially that all prolonged procedures in the course of operating on the lung must be performed under the

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* Read in the Section on Surgery of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Arch. f. klin. Chir., 1907, lxxxii, 1.

most careful covering and bounding of the entire wound area with tampons and compresses. In this respect I agree absolutely with Krause, Helferich and Küttner.

The enormous significance of *x*-ray illumination for the diagnosis of operable diseases of the lung is generally known. With its aid alone, tumors have been recognized in cases in which the most painstaking physical examination failed. Detailed reference to certain corresponding observations in sarcoma and carcinoma would lead me too far and must be reserved for another occasion. Opinions are still at variance as to the relative value of operating in one or two stages in abscess and gangrene. In lung tumors also I leave the advisability of operating in two stages, in many of the cases, an open question for the time being. We are engaged at present in the clinics on work of this character, in which one of your countrymen, Dr. Robinson, of Boston, is taking an active part.

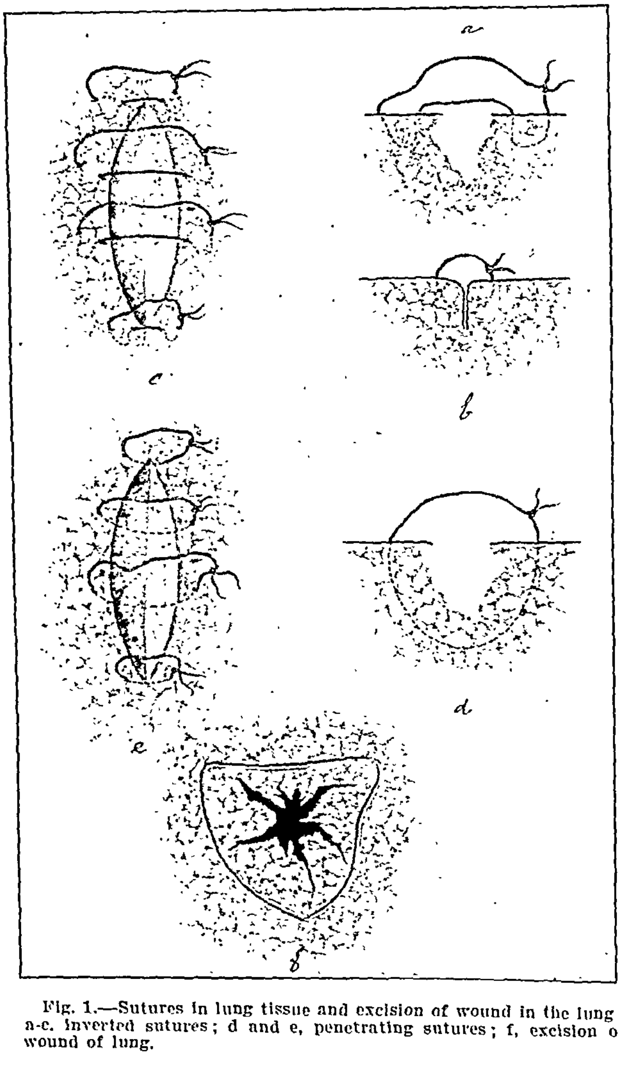

Fig. 1.—Sutures in lung tissue and excision of wound in the lung: a-c, inverted sutures; d and e, penetrating sutures; f, excision of wound of lung.

II. COMPRESSION OF THE LUNG THROUGH THE PLEURA AND THE TREATMENT OF PLEURAL EMPYEMA

The compression of the lung, by way of the pleura, through introduction of air or nitrogen, was recommended in pulmonary tuberculosis by Forlanini, Murphy, Lembke and Schell, Tuffier, Brauer, and in aspirative pneumonia by A. Schmidt. Many among you, I know, are impressed with Murphy's experience. Constricting the volume of the lung, and thereby inducing the shrinkage of the cavernous segments, with the associated influence of the shrinkage on the remaining symptoms, is certainly possible in a series of cases. The scope of usefulness of the method has been much discussed. The technic of nitrogen repletion, after a small pleural incision, is so simple as not to need special discussion. The necessary quickness and the proportionate amount of gas are readily acquired by the operator. The applicability of the procedure is limited, in so far as pleuritic adhesions may represent an insurmountable obstacle. Concerning the actual value and the limits of usefulness of this artificial restriction in volume, it has been found in a large number of cases that the collapse of the lung tissue was followed by subsidence of the sputum and the fever, improvement in the general condition and the physical findings in the lung. The subject has been extensively discussed in the literature of internal medicine.

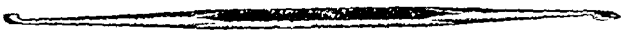

Fig. 2.—Author's bronchial spoon (about one-third actual size).

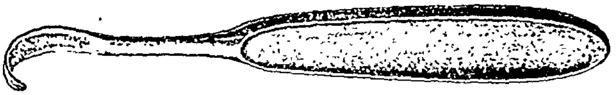

Fig. 3.—Author's double-curved elevator for drawing out the ribs (about two-fifths actual size).

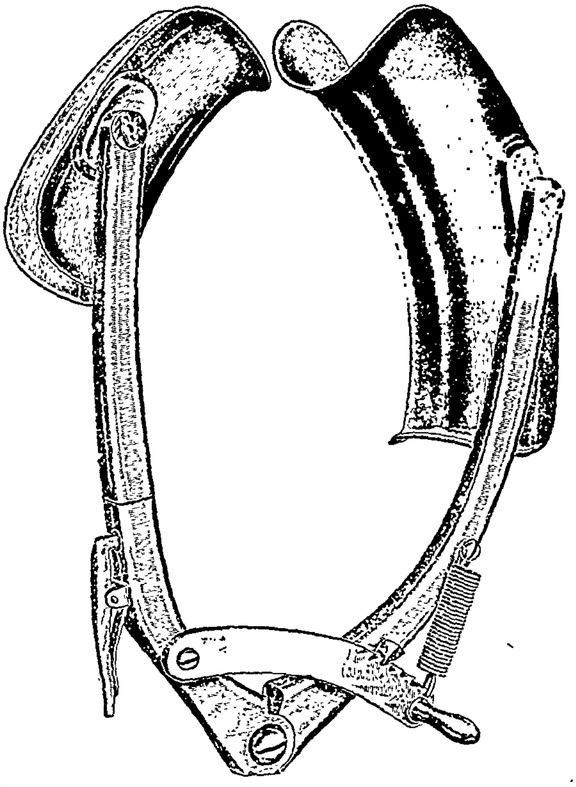

Fig. 4.—Rib-spreader, for use in operations on the lungs; after Mikulicz, modified according to Friedrich (about one-half actual size).

The introduction of the hand, by way of an intercostal incision, in order to enucleate the lung in the presence of adhesions, and to render it compressible, may prove an easy matter, or it may be attended with serious danger, as in one of my cases.[2] In my opinion,

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[2] Quoted in Surg., Gynec. and Obst., December, 1908, p. 632.

this procedure will prove successful in very exceptional cases only, the more so as but little hope is held out even by direct interference with the knife or the actual cautery, on such diseased segments of lung.

The treatment of pleural empyema, which should be referred to in this connection, will be thoroughly discussed to-day by another speaker, so that I shall limit myself to outlining in a few words our own attitude and technic. Every recent empyema is subjected in the first place to puncture with a thick trocar (or a small thoracocentesis incision), followed by immediate institution of drainage according to Thiersch. This is so imperfectly known that a brief description is desirable. A large fenestrated Nélaton catheter is passed through the sheath of the trocar, a rubber membrane with a small orifice is slipped over it and tied fast to the tube where it emerges, thus providing an air-tight closure of the thoracic cavity at the site of the puncture or incision. If the Nélaton catheter is continued into a soft-walled drainage-tube, which acts after the fashion of a vein, permitting the exudate to escape, under increased internal pleural pressure, while it does not allow the entrance of air, because of the coaptation of its walls in inspiration, the result is a reliable mechanism (Fig. 9) which effectively permits the drainage of the exudate and prevents the occurrence of pneumothorax.

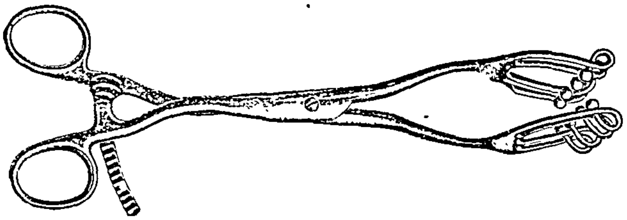
Fig. 5.—Author's lung forceps (about one-third actual size.)

Many empyemas, practically all the metapneumonic cases, are completely healed by means of this apparatus without further surgical assistance. After the pus focus in the pleura has become encapsulated, the resection of one or two ribs may be performed at any time, should the drainage prove insufficient. At any rate this resection has been altogether abandoned by me in recent not circumscribed exudates, because it is here not yet necessarily indicated, requires a longer time, and may be more dangerous through the onset of pneumothorax. Complicated aspiration apparatus is required in rare and exceptional cases only. Thoracoplasty, for long standing empyemas, is sometimes performed only with incisions in the thick pulmonary pleura without decortication of the lung and under partial preservation of the adherent costal picture, as was described by me in the discussion on this subject at the German Surgical Congress of 1898 at Berlin.

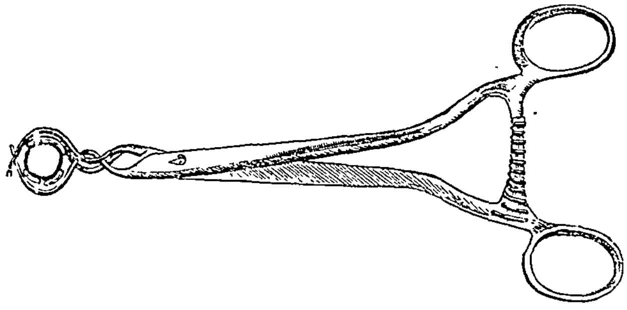
Fig. 6.—Author's hilus-bronchi-clamp, for artificial anemia of the lungs, compression of the pulmonary vessels and leaving open the bronchus (about one-half actual size).

III. OPERATIONS ON THE THORACIC WALL, FOR DISEASE OF THE LUNGS

Among the interventions on the thoracic wall itself, in order to react in this way on the affected lung, operative procedures in emphysema and in tuberculosis have recently acquired prominence. The indications and plan of our thoracoplastic pleuropneumolysis in pulmonary tuberculosis have been extensively discussed by me in several publications, including *Surgery, Gynecology and Obstetrics,* and I have given the details of the proceeding and success of this operation a few days ago at the meeting of the American Surgical Association in Philadelphia.

In the first place I continue to maintain the correctness of my former attitude. The observation of my first cases, now dating back over eighteen months, further confirms the statements made by me at the German Surgical Congress of 1908, to the effect that the majority of the patients operated on are essentially improved, as regards their general condition, increase in body weight, subsidence of cough, sputum and fever. In my last cases, I detached the apex of the lung itself and endeavored to induce its shrinkage. In my most radical procedure of deossification of the chest wall, the first rib had always been preserved, in consideration of the fact that its removal adds considerably to the length of the operation, increases the technical difficulties, and thus heightens the risk run by the patient. In the absence of old periosteal inflammations of the ribs, as a sequel to apicopleuritis, the ablation of the first rib is not, however, attended with special difficulties.

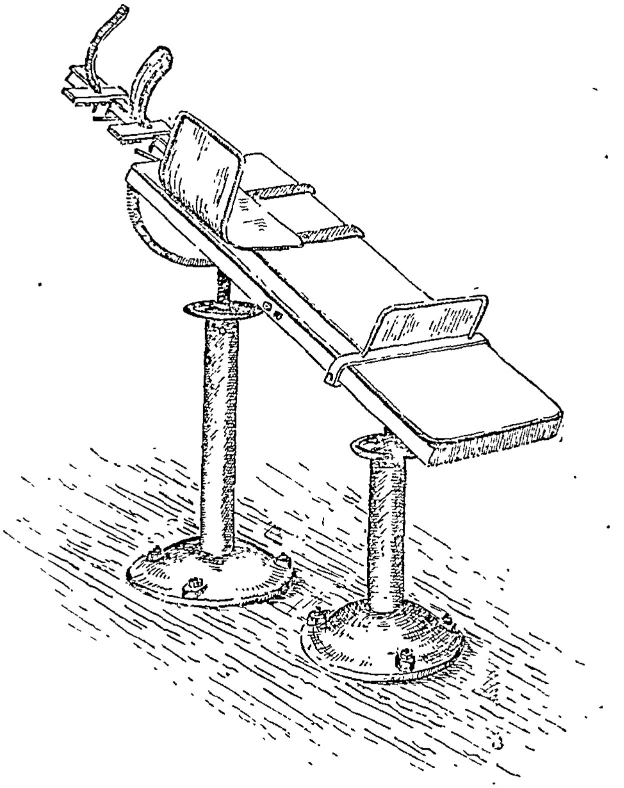
Fig. 7.—Author's lung-operating table.

As has been pointed out in my last publications, the cases should be strictly selected, and only those patients operated on who have unilateral cavernous lesions, with at most passive foci on the opposite side. They must be free from evident recent tuberculous processes in other regions of the body, more particularly the bowel.

Certain recent cases have encouraged me to extend the procedure also to conditions of slowly infiltrating noncavernous phthisis. The arrest of respiration is in itself capable of creating relatively favorable conditions for the cure of this type of phthisis also. In a similar way I have recently endeavored to eliminate an existing tuberculosis of the larynx by means of tracheotomy, and thereby to extend the indications for operating on the lung, but I am as yet unable to express an opinion as to the definite applicability and ultimate outcome under these circumstances. Freund's operation, the division of the first rib for the purpose of counteracting the progress of minute apical lesions, through improved ventilation of the pulmonary apex, I have not ventured on in any instance.

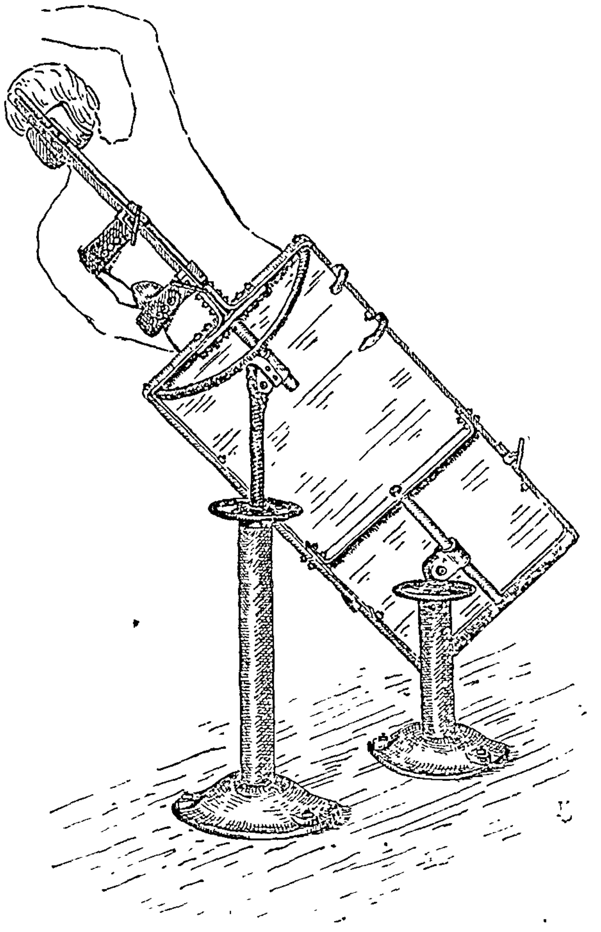

Fig. 8.—Author's lung-operating table, showing position of patient.

Concerning the treatment of pulmonary emphysema, through operative corrections of the rigid thorax by dividing several ribs in their cartilaginous area, I continue to adhere to the modification I have previously referred to, meaning that not only a small segment of cartilage is removed from each rib, as was done by the first operators, in connection with Freund's suggestion, but that pieces of 4.5 to 6 cm. in length are resected at the cartilage-bone boundary of the second to sixth rib, and this procedure followed by careful ablation of the retrocostal periosteum. This procedure has yielded a brilliant operative result in a case of genuine pulmonary emphysema of many years' standing. If the pieces are not long enough, or the removal of the retrocostal periosteum is not sufficiently thorough, a permanent result in the way of improved mobility of the thorax, even purely mechanical in character, can not be guaranteed. I have stated elsewhere that the cases must again be strictly selected for this operation; pure cases of primary alveolar emphysema alone should be operated on, for the time being. In case of all these patients, however, I believe myself fully justified in advocating the operation, which is easy of performance at the hands of an expert surgeon.

IV. OPERATIVE TREATMENT OF DISEASES OF THE THORACIC WALL OF THE HEART AND THE ENTRANCE INTO THE MEDIASTINUM

Tumors of the chest wall may be dealt with at the present day with a certain intrepidity. A number of cases from my clinic have been published, in which a flap of the soft parts was applied directly to the exposed lung, after extensive removal of the chest wall, and healed without reaction. In a case of thoracic sarcoma, in a man 34 years of age, I removed 160 square centimeters of the right diaphragm over the liver, in order to be radical, and the wound healed without interruption. This particular field I am inclined to regard as one in which the differential pressure method will score its first generally conceded triumphs.

The surgery of the heart has likewise been enriched of late by important contributions concerning the indications for operative interference. Especially in injuries of the heart, which in a large percentage of cases are associated with left-sided pneumothorax, I note a very essential advance in the recognition of the cardiac injury, by the rapid control of the pneumothorax through the differential pressure method.

In collaboration in my clinic, Sauerbruch and Häcker showed that the fall of the minimum pressure down to the zero value increases the blood pressure in the body, retards the heart-beat and augments the individual waves. Thus the arbitrary variation of the difference in pressure provides the means for influencing, at will, the sequence of the beats, and the repletion of the heart, in the individual steps of the operation. The pneumothorax will accordingly be maintained during the cardiorrhaphy, and removed for the next following suture of the pleura, in order to have the thoracic cavity filled with inflated lung, and less susceptible to infection. In the experiments, the heart function is invariably retarded as soon as the pericardium is opened, the individual contractions becoming stronger; the heart sometimes bulges out enlarged, the right half being especially voluminous. The hemorrhage is always systolic, becoming diastolic also only in case of large wounds and injuries of the auricles. Bleeding from the left ventricle is as a rule less severe than from the right. I was enabled to demonstrate on the human subject that the employment of the differential pressure method assists in the rendering of the diagnosis and the indications, in so far as the behavior of the pulse did not change with the variation of the pressure differences, the pulse being, therefore, governed exclusively by the heart puncture and the tamponing effect of the blood-filled pericardium on the heart. Furthermore, the hemorrhage from a heart wound is seen to diminish in proportion as the lungs are allowed to collapse. The pneumothorax thus becomes the regulator of the hemorrhage, and is allowed to persist until the suture of the heart has been completed. After the cardiorrhaphy, the pneumothorax is definitely removed, and the pleura and pericardium are sutured. The shaking movements of the heart invariably present during the application of the suture are best controlled by grasping the heart properly, or by means of fixation with a supporting loop.

The intercostal incision alone has been repeatedly advocated of late for the exposure of the heart. At my hands, the ablation of the cartilage of the fifth rib, to an extent of 10 cm., proved very valuable in injury of the right ventricle, after preliminary double ligature of the left mammary artery. One rule will not fit all cases; and the possibility of free inspection should at once be provided, as otherwise much pulling on the heart or bending of the organ may become necessary to render the injury accessible. The ablation of the costal cartilages proved no obstacle for primary wound closing and accurate healing, complete recovery ensuing in a very short time. These experiences with suture of the right ventricle contributed to my adopting a new route for the exposure, especially of the anterior mediastinum; namely, transverse sternothoracotomy. The exposure of the root of the large vessels, as well as entrance into the anterior and posterior mediastinum are enormously facilitated by this mode of incision, with diminution of the dangers, and improved conditions for healing. After bilateral ligature of the mammary artery, the sternum is sawed through from behind with the Gigli saw, and the transverse incision is extended on either side into the intercostal muscle tissue. In this way a sufficiently free access is rapidly obtained (Fig. 10) without sacrificing portions of the sternum or the ribs. In contradistinction, the longitudinal division of the sternum, as practiced in certain isolated cases, not only represents a much more serious and time-consuming intervention, but it has its natural limitations on account of the opposing action of the clavicles and ribs. The removal of a large "Askanazy-glandular tumor" from the anterior mediastinum was successfully accomplished, the case terminating in recovery; also that of a large tumor which grew downward from a pedicle behind the bronchi and the heart, its origin not being properly recognized until the operation. In the second case, both pleura had to be opened at the beginning of the operation, and this proved possible without any disturbance of the heart action during the entire procedure. The patient unfortunately died toward the end of the operation, because of an accidental injury of the wall of the superior vena cava, which was immediately followed by an air-embolism with fatal outcome. These disastrous sequelæ may possibly be avoided in future cases by adopting the suggestion of my assistant, Dr. Schöne, and at once aspirating the air, through a strong pump-syringe (after the manner of Trendelenburg's operation for embolism), from the branches of the pulmonary artery, after temporarily clamping the pulmonary artery or the vena cava close to the heart. Experimentation in my clinic has shown (Sauerbruch and Häcker) that both venæ cavæ may be closed for several minutes, leaving the pulmonary area devoid of a blood supply, without immediately endangering life. On the other hand, personal observation on the human subject has taught me that after complete arrest of the heart action during one to one and one-quarter minutes, the exposed organ will promptly respond again to correct massage, with a rhythmic sequence of beats.

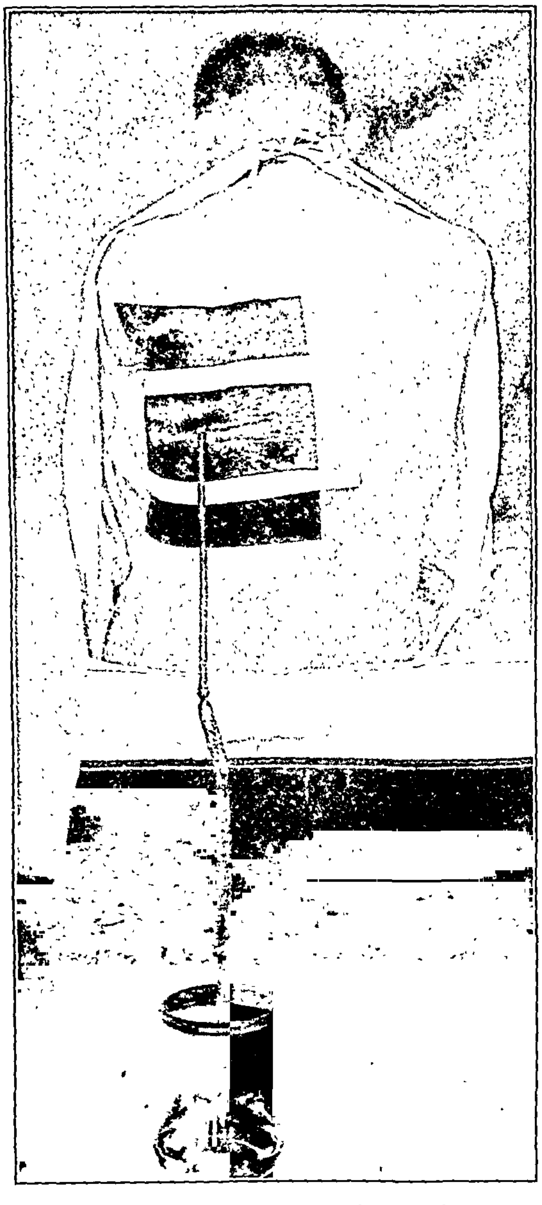

Fig. 9.—Thiersch's drainage.

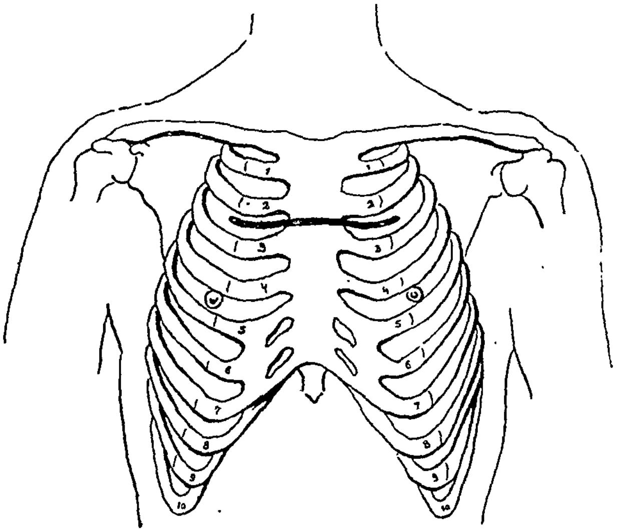

Fig. 10.—Author's transverse sterno-thoracotomy for entrance in the anterior mediastinum.

All the recent experiences of cardiac and mediastinal surgery may be summarized to the effect that by acting promptly, under strict asepsis, after a sharply outlined anatomic plan, we may, with the aid of modern technical devices, anticipate further results which far exceed the limit of what has been accomplished in the past. Successful operative treatment of valvular stenoses of the mitral and aortic valves seems by no means beyond the realm of the attainable.

In conclusion, I wish to add a few words on the resection of the esophagus. Particularly in this connection, the artificial suppression of pneumothorax has induced exaggerated expectations (Mikulicz), but surgical experience is constantly bearing out the views of those who did not consider the prospects in this direction as particularly hopeful. Only the lowermost segment of the esophagus, about 6 or 8 cm. above the cardiac orifice, and the cardiac orifice itself, may still be regarded as legitimate fields for the operation (Sauerbruch, Küttner). Here, again, exploratory thoracotomy can alone afford sufficient information concerning the extent of the disease and the practicability of the operation; and unless the lifting of the stomach through the diaphragm permits the replacement of the lower end of the esophagus we are not justified in speaking of it as a useful operation. The achievement of half-way permanent results, in spite of much earnest endeavor, still remains a desideratum.

I am well aware of the sketchy nature of these remarks, but this mere sketch will serve to show how large a space of time would be required for a fairly complete picture of this special field of surgery.

EXPERIMENTAL INTRATHORACIC ESOPHAGEAL SURGERY *

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During the past year we have limited our work chiefly to intrathoracic esophageal operations. Our aim has been to develop the technic of an operation for each of the following purposes:

1. For circuiting the cardia by the establishment of an anastomosis between the stomach and esophagus.
2. For resection of a portion of both the stomach and esophagus.

We have used two methods of artificial respiration; the one by an inflation of the lungs through an intubation tube; the other by a positive pressure cabinet, similar to that devised by F. T. Murphy and Brauer, in which the head of the dog has been placed.

Each method has had definite advantages. The intubation method has demonstrated two important facts:

1. An artificial apnea is developed which abolishes all muscular effort at respiration during operation.
2. The range of ether-administration is greater and the danger of death from too deep narcosis is less.

The peculiar advantages of the cabinet are the following:

1. The absence of a tube entering the larynx.
2. The smaller quantity of ether required, on account of the pressure of air on the head.

So decided have been the advantages of each method that we have combined the good features of both appliances, and with the cooperation of Prof. Joseph A. Blake, we have had a new apparatus constructed (Fig. 1). It consists of an air-tight box, in the front of which is an opening to receive the patient's head. On both sides of it there are glass port-holes which can be opened and through which the etherizer can constantly view the face of the patient. Below and behind these, at convenient distances, are openings for the etherizer's arms. The posterior one of these is fitted with a rubber valve which prevents the escape of air when the arm is introduced. The front one is closed by the rubber glove suggested by F. T. Murphy, of Boston. This has a long gauntlet and permits the anesthetist to remove the arm at will during the operation. Lights are arranged along the posterior wall for the double purpose of affording illumination and warming the air. The exact shape of the box is unimportant.[1]

The particular feature, however, to which attention is directed is a mechanism situated on the top of the cabinet that permits of a rhythmical escape of air from the box. In virtue of this there is a periodical rise in pressure to the desired height, alternating with a rapid fall to normal atmospheric pressure. The rapidity of this rhythm can be varied at will by the rheostat which controls the speed of the motor and pump. The valve accomplishing this is opened and closed by a commutator turned by a gear and pinion attached to the crank-shaft of the pump. The brush making the contact with the commutator is in series with a helix which operates this valve.[2]

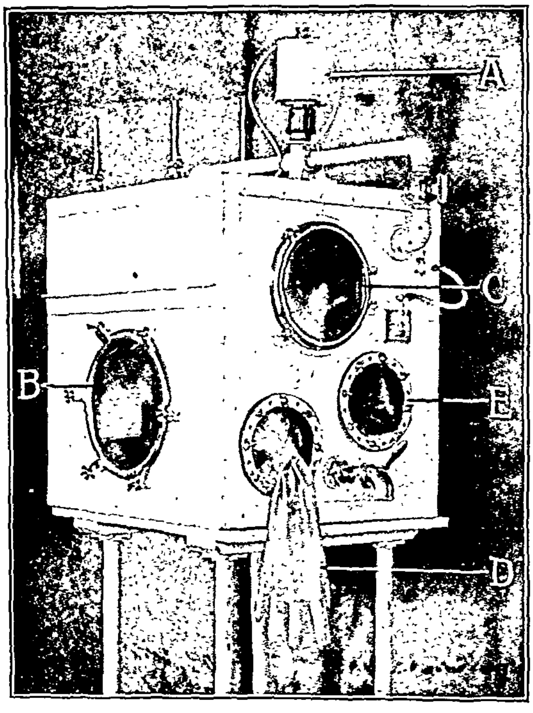

Fig. 1.—Pneumatic positive pressure cabinet. A, automatically working valve for producing rhythmical rise and fall of pressure; B, opening for the head; C, glass port-hole for observing the patient; D, port-hole for the left hand with the glove pulled out; E, opening for the right hand of the anesthetist.

By means of this mechanism practically as complete inflation and deflation of the lungs and the same inhibition of muscular efforts at respiration is obtained as by the intubation method. Professor Blake, for whom this cabinet has been made, has on the human subject demonstrated that such an inhibition occurred. During an

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* Read in the Section on Surgery of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] We are now having another cabinet constructed which is so arranged that the etherizer is seated behind and introduces his hands through holes in the back wall, and views the patient's head through a port-hole situated in a slanting posterior portion of the roof of the box.

[2] We are now devising a more compact pump and motor which can be placed on the shelf between the legs of the table on which the box rests.

operation for empyema in a child, whenever this device was utilized, the diaphragm and intercostal muscles remained at rest. This contrasted strongly with the respiratory efforts which occurred as soon as the valves were turned which permit of a change to the maintenance of a constant positive pressure. We desire to lay special stress on this point, because the absence of muscular movements during operations in the thoracic cavity contributes in an important degree to the speed and ease of the operation.

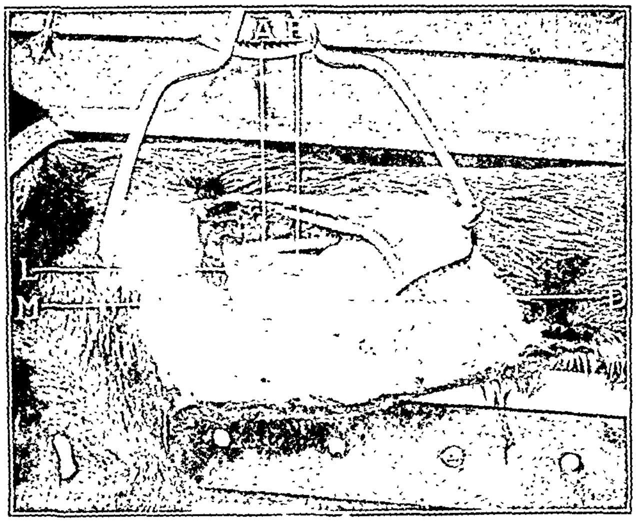

Fig. 2.—Chest opened with the viscera undisturbed. A, aorta; E, esophagus; L, lung held up by retractor; M, mediastinum; D, diaphragm.

TECHNIC OF OPERATIONS

In the past year we have operated on sixty-nine dogs. During the entire time of each operation complete anesthesia by either chloroform or ether was maintained. Our technic has been as follows:

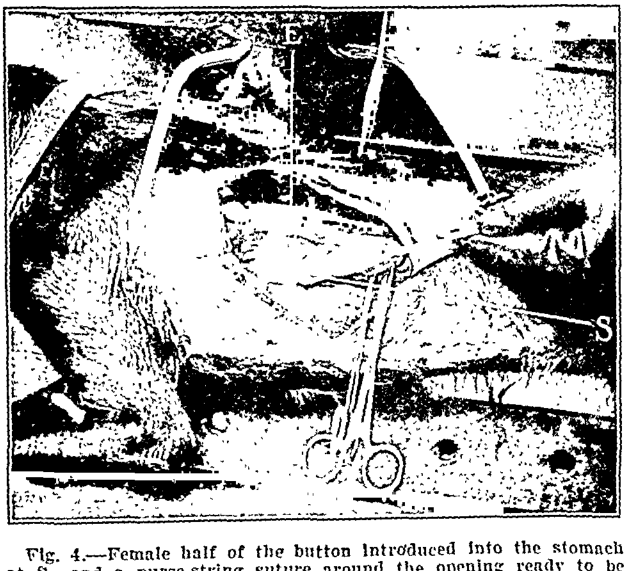

Fig. 4.—Female half of the button introduced into the stomach at S; and a purse-string suture around the opening ready to be drawn up. The male portion of the button lies in the esophagus at E.

1. Gastroesophageal Anastomosis Without Resection. —The eighth rib is first resected subperiosteally. The chest cavity is opened in the periosteal floor of the resected rib (Fig. 2). The peritoneal cavity is opened through the diaphragm, and the anterior wall of the stomach is drawn into the thoracic cavity (Fig. 3). The stomach is opened, the female half of the button is introduced (Fig. 4), and the opening closed by a purse-string suture. The male half, which has been previously passed down the esophagus, is now separated from its carrier and supported for engaging the female half (Fig. 5). This button, which has been designed by us especially for esophageal anastomosis and depends for its union on penetrating needles, is then pressed together. The circle of anastomosis is reinforced by a running suture (Fig. 6). The portion of tissue between the two halves of the button subsequently sloughs out and liberates the button. The opening through the diaphragm is closed by suturing this structure to the wall of the stomach (Fig. 7). Closure of the chest completes the operation.

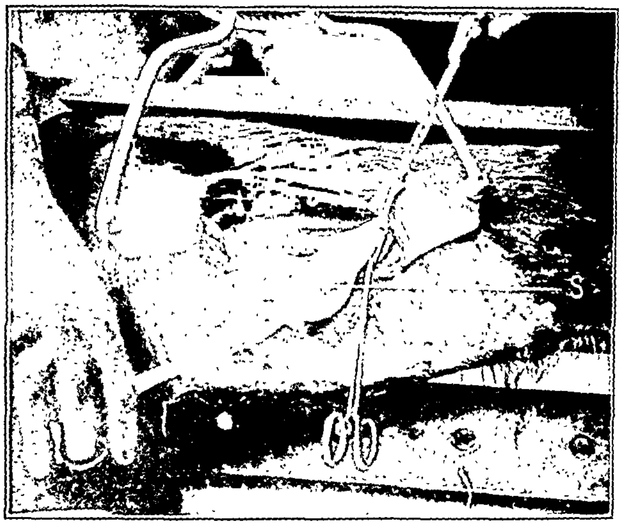

Fig. 3.—Diaphragm opened and the anterior surface of the stomach, S, drawn up through the opening.

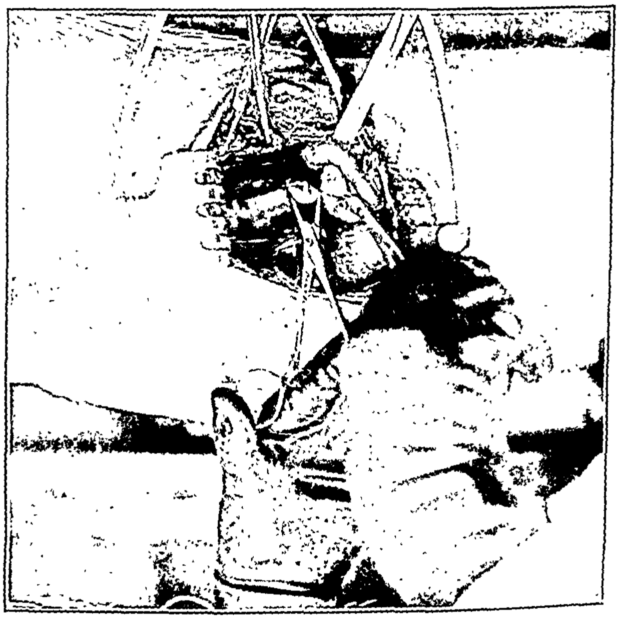

Fig. 5.—The two halves of the button (within the esophagus and the stomach) being approximated and ready to be pressed together.

2. Gastroesophageal Anastomosis with Resection of a Portion of the Esophagus and Stomach.—In this procedure we have found it an advantage to resect both the seventh and eighth ribs, but to open the thoracic cavity in the periosteal floor of the seventh rib. The peritoneal cavity is opened behind (Fig. 8) and in front of the stomach. The gastrosplenic (Fig. 9) and gastrohepatic ligaments are now divided between double ligatures. This permits of the delivery of a large portion of the stomach into the thoracic cavity. The cardia is divided with the cautery-knife between two clamps (Fig. 10). The esophageal stump is protected by clamping over it a gauze pad. Interrupted Lembert sutures are passed from the posterior wall over the clamp to the anterior wall of the stomach. The clamp is now removed, all bleeding stopped, and the female half of the button dropped into the cavity of the stomach. The interrupted sutures are now tied and closure of the stomach completed by continuous Lembert sutures. The esophagus is then amputated by the cautery between a purse-string suture, and a clamp which is applied to the upper end of the segment to be removed. The free end of the esophagus is pushed into the cavity of the male half of the button (Fig. 11), and the two halves are pushed together. The circle of union is reinforced by a running stitch (Fig. 12). The stomach is then sewed to the opening in the diaphragm, and the chest wall closed.

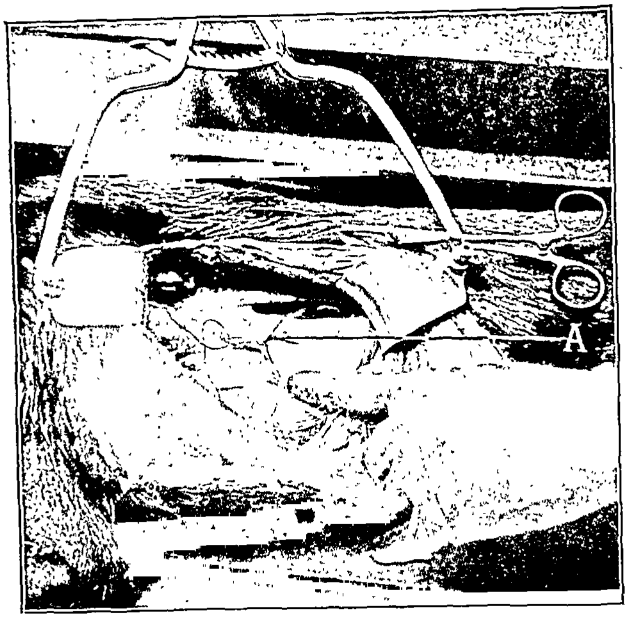

Fig. 6.—Anastomosis made by the button at A. It is being reinforced by a continuous Lembert suture around it.

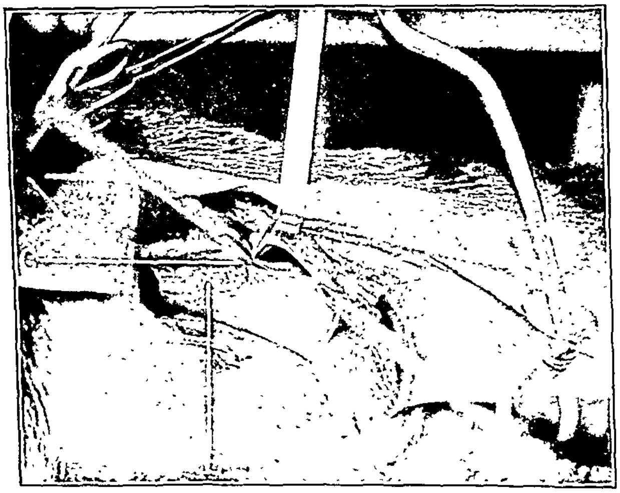

Fig. 8.—Opening behind the stomach into the peritoneal cavity. E, esophagus; artery clamp is holding the crus of the diaphragm C.

Our work has demonstrated that speed, absolute asepsis, and scrupulous care in the minimizing of trauma are essential to success in intrathoracic surgery. Even the exposure of the raw mucous membrane, a procedure which is done with impunity in the abdomen, is not devoid of danger in the thorax. It is, therefore, for the sake of diminishing trauma, and preserving greater asepsis that we have utilized a button in making the anastomosis. Our results have been decidedly better than they were by the suture method. We feel that the principles mentioned above explain why this is so. We have adopted the use of a button with some reluctance, because, for anastomotic purposes elsewhere, a suture method is preferable. We hope, from what Dr. Meyer has told us of his work in this field, that it may be accomplished.

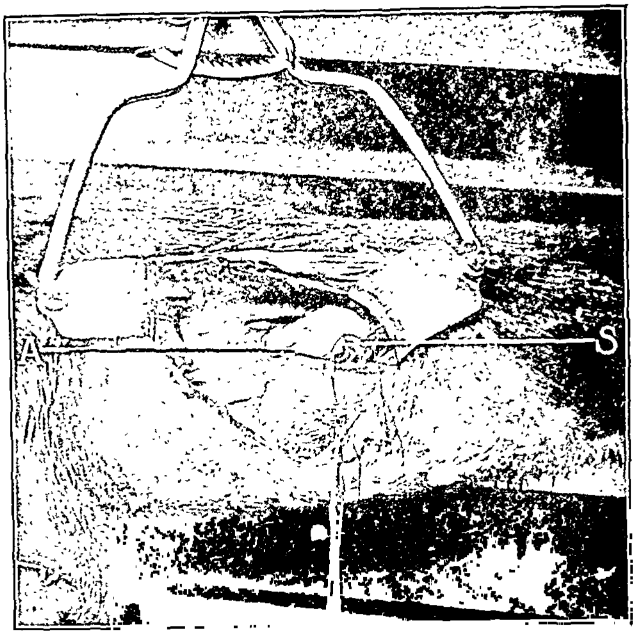

Fig. 7.—Anastomosis completed at A, and diaphragm being stitched to the stomach at S, for the purpose of preventing prolapse of any viscus into the chest.

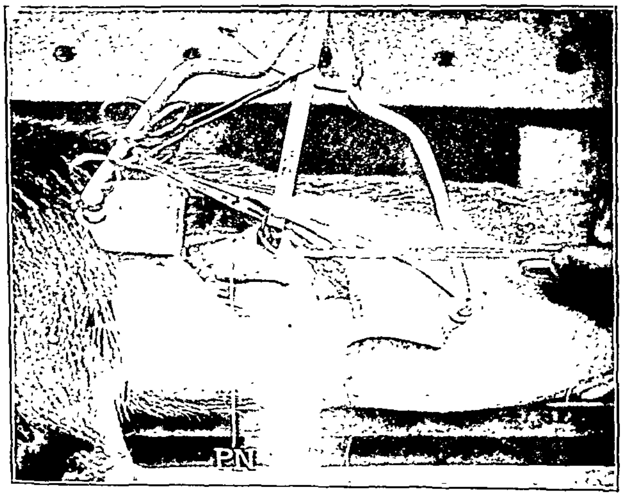

Fig. 9.—Passing of a double ligature around the gastrosplenic omentum and the attachment of diaphragm to esophagus. The left pneumogastric nerve with a diagonally communicating branch is shown at Pn.

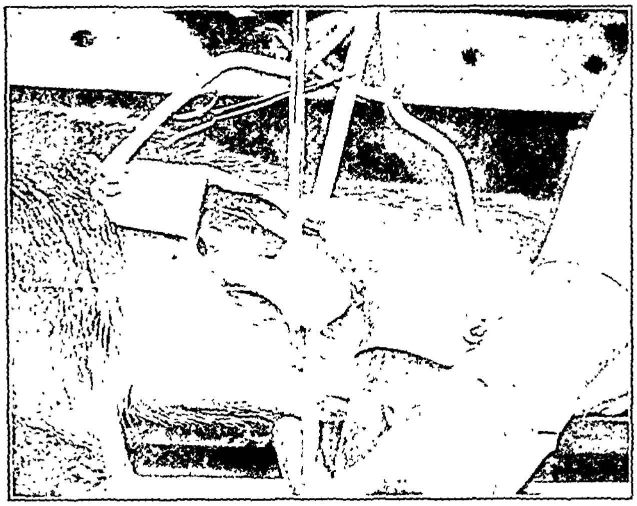

Fig. 10.—The gastro splenic and gastrohepatic omenta have been tied and the cardia has been drawn up into the chest. Two clamps are placed across it at C, preparatory to cutting it through with the cautery knife.

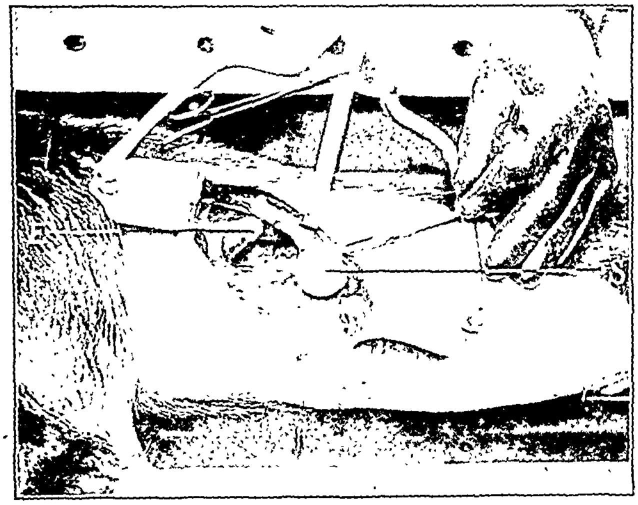

Fig. 11.—Stump of the esophagus, E, and the stomach, S, previously closed by a Lembert suture, and containing the female half of the button. Above the stump of the esophagus, and in its lumen, lies the male half of the button. These two portions are ready to press together to form the anastomosis.

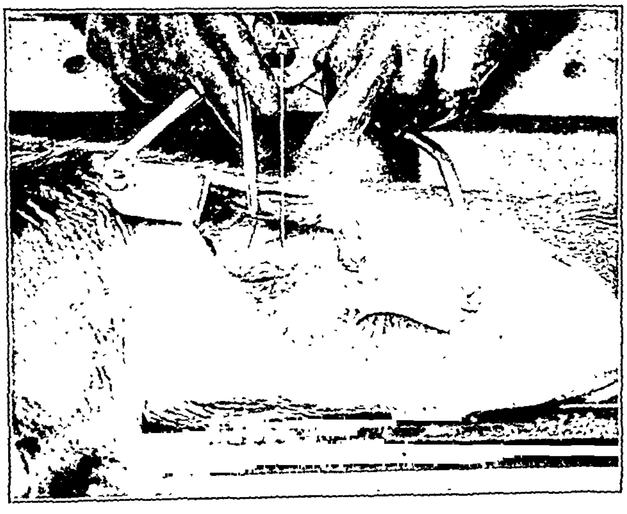

Fig. 12.—Anastomosis at A, made by pressing the two halves of the button together. A continuous silk suture is being passed around the point of anastomosis.

Even with our latest technic the results are far from satisfactory. We have, however, successfully accomplished four resections of the cardia and esophagus, and six lateral anastomoses of the stomach and esophagus without resection. Nevertheless, our work indicates that with a further improvement of technic the operation of the anastomosis with a resection can be accomplished without so great a mortality, and will eventually prove a procedure of promise. On the other hand, the operation of anastomosis of the esophagus with the stomach without a resection, under our present technic, is not accompanied with a high mortality.

PNEUMECTOMY WITH THE AID OF DIFFERENTIAL AIR PRESSURE: AN EXPERIMENTAL STUDY

THE NEW TYPE OF APPARATUS USED *

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I. EXPERIMENTAL WORK IN EXCISING LOBES OF THE LUNG

Next to suturing stab and shot wounds of the lungs and extracting from the bronchi foreign bodies that have been located by the x-rays but cannot be removed by means of the bronchoscope, excision of a portion of the lung and amputation of one or more of its lobes (pneumectomy), have been rendered possible by the use of differential air pressure.

Resection of a lobe seems indicated when the greater part of it has become diseased, but its main bronchus cannot be properly reached and isolated. In the human being this condition is frequently encountered.

Extirpation of one or more pulmonary lobes, other more conservative methods having failed, will perhaps become the operation of choice in cases of serious destruction of the lung tissue by chronic inflammatory processes, and, of course, in the presence of new growths.

The success of the operation for total extirpation of the lung depends on the operators' ability to close the divided bronchus air-tight.

Various methods have been employed for this purpose, as follows:

1. One mass silk ligature around the bronchus and its vessels; amputation; cauterization of the mucosa of the stumps with pure phenol or the Paquelin cautery.
2. Elastic mass ligature around hilus; removal of lobe at second sitting (Lenhartz).
3. Ligature and division of main bronchus; remnant of lung tissue stitched over stump (Garré).
4. Isolation and temporary clamping of bronchus: curetting of the mucous membrane of the divided bronchus; tight silk ligature; second loose catgut ligature more centrally around bronchus (Friedrich).

A fifth method of extirpating the lung is developed below. It is original with myself as regards the treatment of the stump and was perfected in the course of operations on dogs at the Rockefeller Institute for Medical Research, New York, beginning the middle of November, 1908.

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* Read in the Section on Surgery of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

In this work I had the able assistance of Dr. Martin Rehling, adjunct attending surgeon at the German Hospital of New York, who also took charge of the aftertreatment of the dogs operated on, and further of Dr. Edward Adams, instructor in surgery at the New York Post-Graduate Medical School and Hospital, for anesthesia. To both of them my sincere thanks are herewith again expressed.

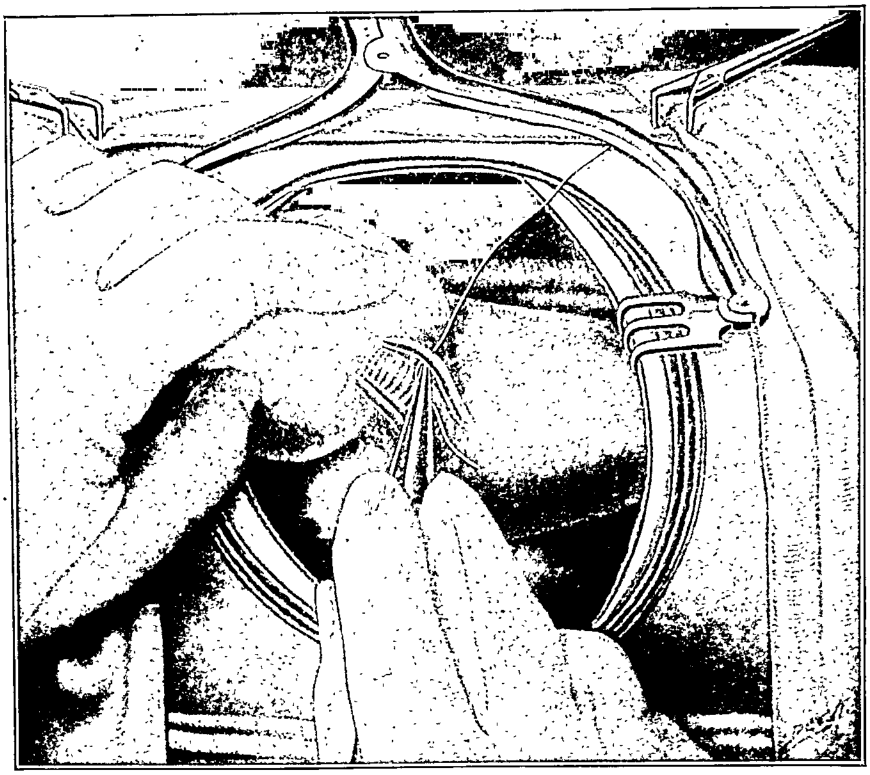

Fig. 1.—Intercostal incision in third or fourth left interspace. Rib-spreader in place. Descending aorta and portion of esophagus in background. Both hands covered with cotton gloves. Left hand pulls lobe of lung upward and palpates bronchus. Right hand pushes anatomic forceps between bronchus and its accompanying blood-vessels and draws silk thread through for ligature. Vessels then doubly ligated and cut through one after another.

After a few trials the mode of excision which is now pretty generally practiced in appendectomy was adopted as standard, viz.: isolation of the organ (here the bronchus); clamping and crushing; ligation and amputation; burying the stump; top sutures.

1. Isolating the Bronchus.—The lung is pulled forward with the left hand and its main bronchus palpated; with an anatomic forceps the spaces between accompanying vessels and bronchial wall are penetrated, one after the other, from the front backward; a silk thread is pushed between the blades of the forceps by the assistant and pulled through by the operator (Fig. 1). The vessel is tied close to the heart. Then by pulling on the first ligature, a second silk thread is passed through and tied distally. The vessel is then divided. This manner of securing the vessels in the depth of the thoracic cavity is preferable to using a Deschamps needle with a double thread. Two to four vessels have to be ligated according to anatomic findings, which vary much according to the early or late division of the pulmonary vessels. Now the bronchus is entirely freed; the loose connective tissue is pushed off with a gauze mop proximally and distally in order to have the bronchial stump as long as possible.

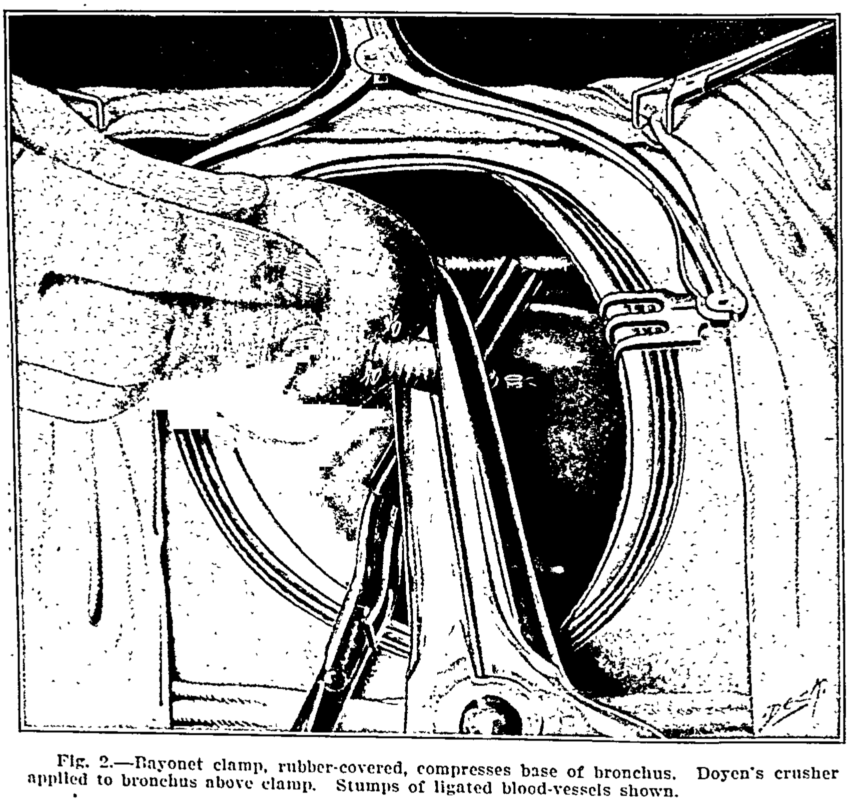

Fig. 2.—Bayonet clamp, rubber-covered, compresses base of bronchus. Doyen's crusher applied to bronchus above clamp. Stumps of ligated blood-vessels shown.

2. Clamping and Crushing.—A bayonet clamp is placed on the bronchus near to its base, its blades being covered with rubber tubing. Above it the bronchus is crushed,[1] usually with Doyen's large intestinal crusher (Fig. 2).

3. Ligation and Amputation.—The remaining fibrous sheath is ligated with silk, a clamp placed distally and the bronchus cut off (Fig. 3).

4. Burying the Stump; Top Sutures.—Before removing the bayonet clamp, or after, according to ease of access, the bronchus is secured on either side with a pointed forceps (Fig. 4). In order to accomplish that safely, a branch of the vagus nerve must

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[1] The crusher should be an instrument the working of which can be fully controlled by the operator; it should always be applied with care, its nose pointing at right angle to the bronchus, catching the cartillages surrounding the bronchial tubes which have to be crushed in a line with their longitudinal axis; otherwise, a hole will be torn in the crushed portion.

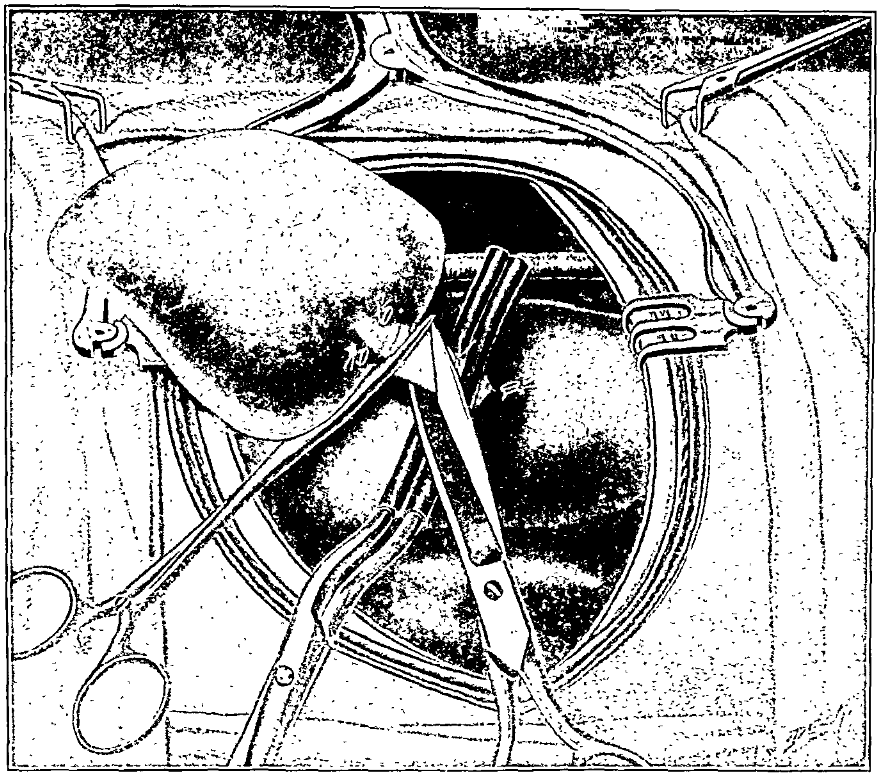

Fig. 3.—Crushed portion of bronchus ligated with silk about three-eighths to one-half inch above bayonet clamp. Strong artery clamp applied distally. Scissors divide crushed portion of bronchus between distal clamp and ligature.

often be pushed aside with a blunt instrument. Care should be exercised to avoid injuring the nerve. The two clamps are pulled on and the crushed part is pushed back into the lumen of the bronchus with anatomic forceps or tucker. Two to three top sutures (silk) draw the uncrushed part of the stump over the buried, crushed portion. The sutures must not include much tissue; they should not penetrate into the lumen of the bronchus. When tied, air-tight occlusion results (Fig. 6). If material is lacking, the pericardium can be hooked by the needle on one side of the bronchial stump and thus used to advantage for closure.

This method of burying the stump sometimes cannot be carried out; for instance, if the bronchus divides early, so that the ligature must close two lumina (Fig. 7, a). In that event an emergency method must be resorted to as follows: A second (mass) ligature is drawn around the stump by the assistant with an anatomic forceps in one hand and the crushed part of the bronchus pushed inward by him with the other hand. The operator then ties it firmly (Fig. 7, b). The ligature will, in most instances, grasp and then securely hold the buried part.

These are the two methods used by me in treating the stump. Both are practical, but the safer and more surgical one is the sewing of the uncrushed portion of the stump over the crushed portion, so as to form an air-tight cover for the same (Fig. 6, a, b, c).

The described method insures a permanently air-tight closure of the bronchial stump. The importance of such air-tight closure will be understood from the fact that leakage produces pneumothorax and, if the thoracic wound had already been closed, would result in a fatal issue. Should the stump be found to leak, such a condition becoming apparent through a rapidly increasing emphysema of the skin, the patient must promptly be put back under differential pressure, the thoracic cavity be reopened and the stump be made air-tight.

The next step in the operation is the closing of the thorax. In my paper[2] on esophagogastrostomy read last week before the American Surgical Association, it has been pointed out that in opening the thoracic cavity it is advisable to avoid resection of the ribs; closure of the wound is thereby simplified. The intercostal arteries are easily injured by the needle in closing the wound, if one or more ribs have been excised, unless a mass

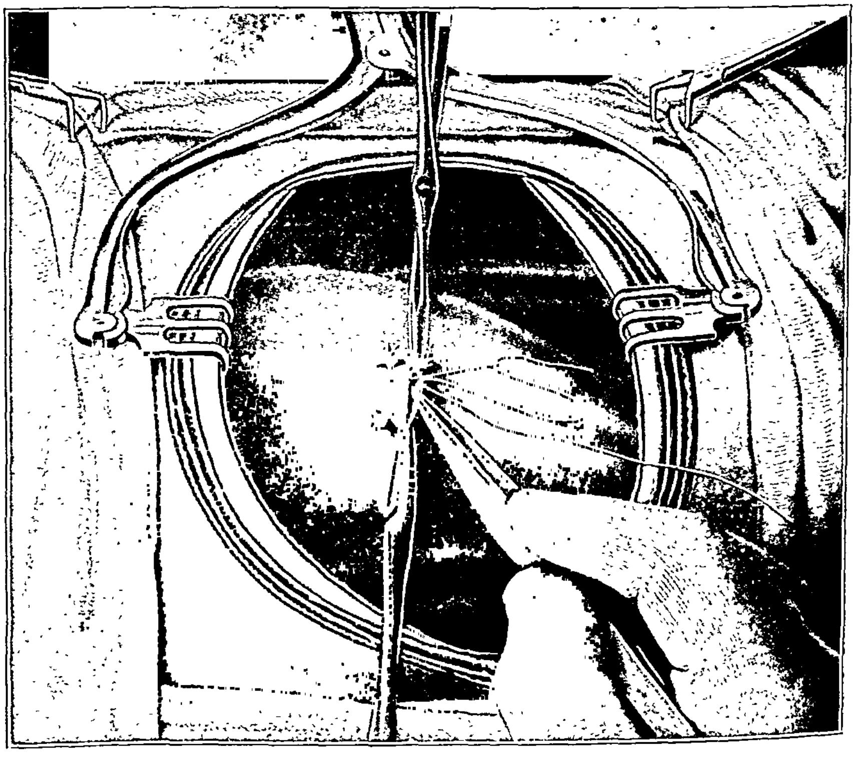

Fig. 4.—Stump of bronchus pulled forward with two pointed artery forceps. Crushed portion pushed inward with anatomic forceps (or tucker). One of the two or three required top sutures (silk) being laid.

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[2] Meyer, W.: Esophagogastrostomy after Intrathoracic Resection of the Esophagus, Ann. Surg., July, 1909, L, 175.

ligature at the proximal end of the rib is made to surround the vessels. I prefer a long intercostal incision and then separate the ribs by a suitable rib-spreader. In closing the wound, two or three retention sutures with silk or chromicized gut surround the two ribs next to the incision.[3] Below, the needle enters close to the upper border of the rib which is to be surrounded, and above, it is made to hug the upper border of the rib adjacent to the incision (Fig. 5). The thoracic parietes are closed with continuous layer sutures of catgut. A few retention sutures of silk or catgut approximate the skin wound, which then is closed with great care, the needle always piercing the borders close to the wound to avoid overlapping. Aseptic gauze dressing completes the operation.

When the thorax is thus closed, the pleural cavity is, at first, full of air. With advancing cicatrization, this air is absorbed, the heart with the opposite lung is gradually pulled to the other side, the diaphragm rises and the thorax flattens somewhat. The cavity is thus gradually filled in. This process takes several weeks, if not months.

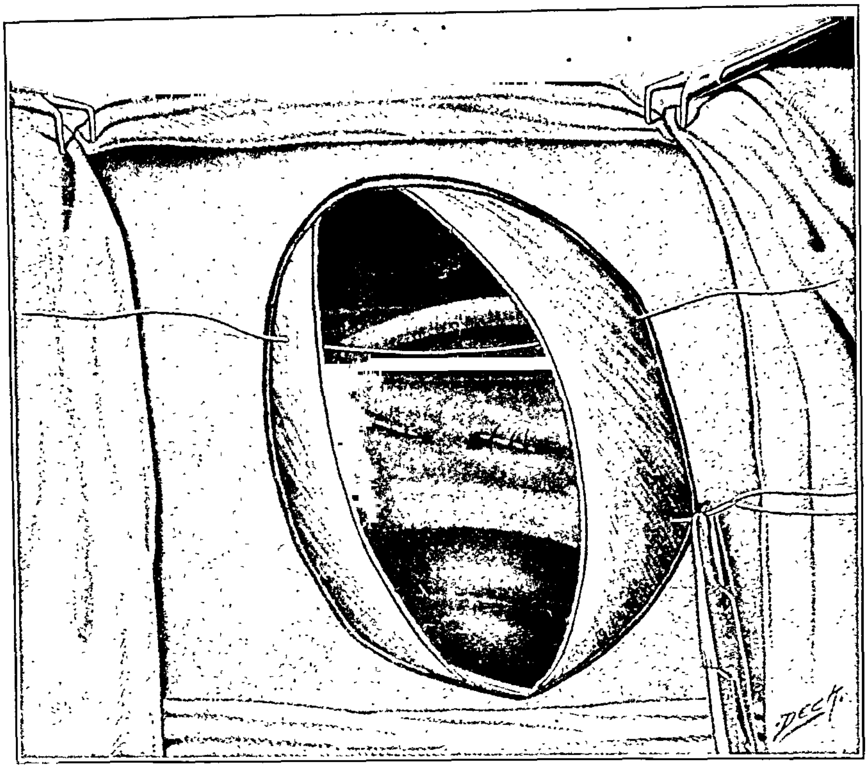

Fig. 5.—Sutured bronchial stumps in depth, shown diagrammatically. Esophagus crossed by aorta in background. One pericostal silk suture *in situ*, the second one being placed.

What takes the place of the removed lung in the interval? A logical conclusion would be to assume that a serous effusion sets in as soon as the air left in the empty pleural cavity has been absorbed. But such is not the case, according to Dr. F. C. Wood, of New York, pathologist to the German and St. Luke's hospitals, who kindly assisted in the investigation of this interesting question. His preliminary report, under date of May 26, 1909, on the first four dogs supplied him, is as follows:

PATHOLOGIC REPORT

The animals were bled from the femoral artery and then immediately injected through the same vessel with 4 per cent. formaldehyd. They were then frozen solid and sawn in that condition. The topography of the organs must, therefore, be absolutely normal.

Dog 1 (*Lab. No. 48*).—Terrier, white, fairly well nourished but of light bone; killed ten days after excision of the left lung. The thoracic wound was clean. There was considerable falling in of the lateral wall of the left chest, with restriction of motion of that side. The pleural cavity on the left side contained a small amount of clear serum.

On section, the right lung was found to fill the right side of the chest and to extend in its lower portion beyond the middle line. Anteriorly also it passed over the surface of the heart beyond the median line. The upper lobe curved forward to the left about 3 cm. beyond the middle line. Anteriorly the heart was in contact with the chest. Posteriorly the aorta and esophagus curved forward between the heart and the lateral chest wall so that there was a considerable space in the left pleural cavity still filled with air. There were no adhesions anywhere. The diaphragm on the left side had been pushed up about 2 cm. The stomach, though empty, was placed much higher than was usual, following the liver and diaphragm up toward the left pleural cavity. All the organs appeared normal. The bronchial stump was perfectly healed. The chest scar was clean and showed only as a slight thickening on the inner wall of the thorax.

Dog 2 (*Lab. No. 34*).—Foxhound, small white, rather thin, but with good muscle and bone; weight, 10.5 kilos. Operation, excision of left lung, March 19, 1909; killed April 1, 1909, thirteen days afterward.

No noticeable falling in of chest wall and no interference with respiratory movements.

Section in transverse plane showed right pleura large and filled with emphysematous lung. Heart pushed over about 2 cm. to left. Left pleura filled with air. No fluid in left pleura and no inflammation of walls of cavity beyond a slight reddening along the line of the intercostal incision into left pleura.

Dog 3 (*Lab. No. 33*).—Terrier, brown, in good condition, but thin and light-boned. Left lung excised March 16, 1909; killed April 3, 1909, eighteen days after operation.

When alive the thorax on the side from which the lung was removed showed some falling in and restriction of movement in breathing.

On section, the left pleural cavity was closed, but the leaves of the pleura were not adherent. There was no inflammatory exudate. The right lung had expanded, following the heart to the left. The lower lobe passed completely behind the heart over to the left, and appeared to the left of the ventricle. The site of the bronchial stump can scarcely be seen.

Dog 4.—Terrier, white with black and brown markings, very powerful muscles and bones. Dog in very good condition. Left lung excised March 9, 1909; killed April 8, 1909, thirty days later.

While the animal was alive no falling in of the thorax or restriction of movements was noticed.

On section, the heart was found to be slightly displaced to the left and followed by the right lung. The left pleural cavity was but slightly smaller than normal and was filled with air. There was no fluid in the pleura and no evidence of inflammation. The bronchial stump projected about 2 mm. from the mediastinal wall, and the ligatures were still present.

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[3] This method suffices in animal experimentation. When operating on human beings, Friedrich drills a hole into the lower rib, passes the ligature through the same, and then surrounds the adjacent upper rib. In view of the fact that the thin fascial parts of the thoracic wall, when sutured, tend to necrosis, thus interfering with primary union later on, it seems advisable to use in place of silk, chromicized catgut for these sutures. It does not have to be extracted.

It is astonishing how well dogs stand entire removal of the lung on one side. Often they were on their feet in less than an hour after the operation, as soon as the effect of the hypodermic injection of morphin had worn off, which was administered at the time of putting on the dressing at the close of the operation.

The remarkable ability of the lung to continue performing its function even in the face of a far-reaching, though gradual, destruction of its tissues, as in tuberculosis, is well known. Research by means of differential pressure has now shown that such destruction of lung tissue is equally well borne when it occurs suddenly, i. e., if one or more lobes are removed with the knife.

The method for such sudden removal, described above, is a reasonably safe procedure in dogs and so effective that its trial on human beings appears justified in cases in which excision of the lung is indicated, with this difference, however, that in the human being the first branches of the main bronchus *take the place* of the main bronchus of the dog (Friedrich).

As proof of the effectiveness of the method the statistics follow below of my results obtained with it at the Rockefeller Institute in the course of the last six months.

Twenty-one total pneumectomies were performed, 18 on the left and 3 on the right side. Of the 18 dogs on which the left-sided operation was performed, 15 recovered and 3 died. The cause of death in one case was a small gauze mop left in the chest, and in the other two cases pneumothorax, which was due in one instance to a leaky stump and in the other to the reopening of the inner angle of the sutured wound. Of the 3 dogs on which right-sided pneumectomies were performed, 2 recovered and 1 died, death being due to distemper.

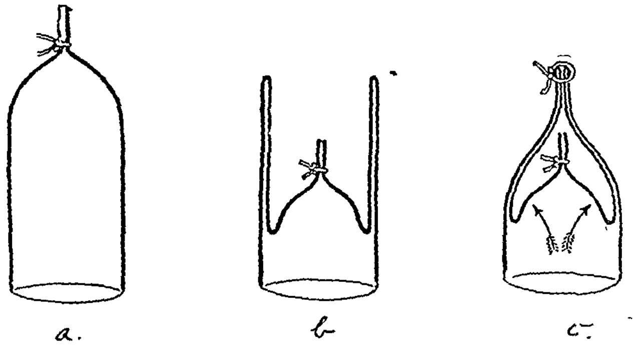

Fig. 6.—Diagram: stump and crushed portion of bronchus (a) tied; (b) pushed inward; (c) sutured. Arrows indicate direction of intrabronchial air-pressure, which makes bronchus air-tight against itself. Safety of occlusion increases with increasing air-pressure.

Thus of 21 total excisions of one side of the lung we had 17 (81 per cent.) recoveries and 4 deaths.

Removal of one or more lobes of one lung was done 6 times. Of these dogs 5 (100 per cent.) recovered and 1 died, death occurring in the course of the operation from the anesthetic.

Summing up, I had in my work, as far as the finished excision of the lung is concerned, in 26 cases, 22 recoveries (84.6 per cent.). At one time an uninterrupted series of 12 dogs recovered without a single death. Usually the wound healed under one dressing.

These satisfactory results I attribute to the rigid asepsis and the method of operation employed, also to the safe and reliable working of the new "differential pressure apparatus," by means of which all the operations were performed.

It is described in the second part of this paper.

II. THE NEW AMERICAN-BUILT APPARATUS FOR THORACIC SURGERY

We owe it to the work of Sauerbruch and Brauer that the thoracic cavity has been definitely opened to surgery. There now remains no nook, no corner of the human body to which the knife cannot be applied with safety.

Operations on the organs within the thoracic cavity, principally the lungs, esophagus and heart, have been done prior to the research work of those investigators. Especially the heart has had an exceptional position, inasmuch as an osteoplastic operation on the thoracic wall permits the surgeon to reach it and its pericardial sac without injury to the pleural cavity. Still, such injury could not always be avoided, nor was a safe operative attack on the lungs and esophagus, without the presence of adhesions between costal and pulmonary pleura, possible before 1904.

The physiologists, it is true, had solved the problem long ago in their laboratory work on animals. With a cannula tied in the incised trachea, or later with an intubation tube, air was rhythmically forced into the lungs by bellows and artificial respiration thus kept up as long as needed (Fell-O'Dwyer and others).

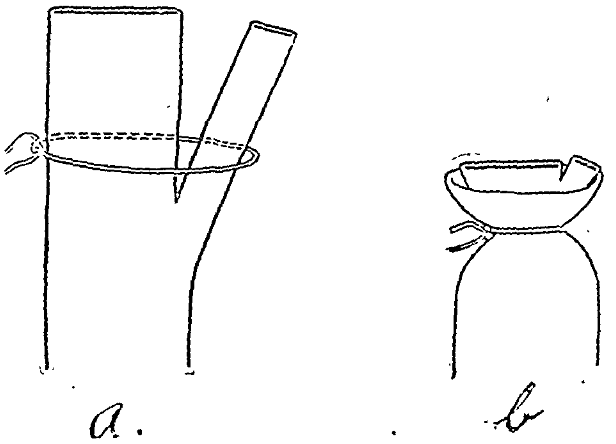

Fig. 7.—Diagram: bronchus short and dividing early; (a) ligature of crushed main bronchus and branch; (b) crushed portion being thicker than lumen of bronchus, the complete pushing in is not feasible. Mass ligature around stump and crushed part.

But with such devices the surgeon could not be satisfied for regular operative work on sick human beings. His requirements differ from those of the physiologists. He must be enabled to do operations within the thorax as safely as in other parts of the body, at least so far as general anesthesia with its possible sequelæ and accidents is concerned. He should not be obliged to put a cannula into the trachea, either through the mouth or directly through a tracheal incision to produce anesthesia. The head and mouth of the patient must be as unincumbered and within as easy reach of the narcotizer in thoracic surgery as in other operative work, *while an* acute pneumothorax must be avoided, that stumbling-block which, up to the beginning of this century, practically excluded the lungs and intrathoracic portion of the esophagus from the domain of operative surgery. The requirements of the surgeon are *filled by differential* air pressure apparatus.

I have been interested in differential pressure surgical work from its inception, having been brought in close touch with it, while in Europe in 1904, and seeing at that time an operation performed in the just completed first differential pressure chamber ever built.[4]

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[4] Ann. Surg., 1905, xli, 667.

But there remained in that chamber as well as in all those built later on the same general lines considerable scope for improvement.

The European negative pressure chambers being constructed entirely of metal, are reverberating and through their pipes connecting with the pump cylinder all the noises occurring from valves and otherwise in the pump are directly transmitted to the chamber. Surgeon and anesthetizer are separated by a solid wall and cannot hear each other speak; for communication a telephone is provided, but the noise in the chamber makes it almost useless. Again, the anesthetizer can look into the chamber; but the surgeon cannot see the face of the patient, which is hidden from his view by a metal casing. Neither surgeon nor the assistants have sufficient elbow-room, and there is no space for an assistant to the left of the surgeon. No provision has been made against break-down of power. As placed, the large European differential pressure chambers can be used for negative pressure only.

All the other types of European apparatus are constructed for positive pressure only. They are distinctly inferior to the above-mentioned negative apparatus, inasmuch as with all of them occasions arise which necessitate the interruption of the differential pressure during anesthesia, the Engelken type of apparatus perhaps excepted; but the latter has not only all the before-mentioned disadvantages of the negative pressure chamber, but also the additional fault that the anesthetizer is not permitted to concentrate his attention exclusively on the patient, he having to take care also of the pressure-regulating valve and of the telephone.

In the Brauer as well as in the Engelken type of apparatus the anesthetizer's position during the operation is rather uncomfortable, and in the Brauer type especially the proper handling of the patient under anesthesia is a difficult matter.

Apparatus combining intubation and masks appears so manifestly inadequate and dangerous for every-day surgery that it cannot deserve preference over apparatus leaving the mouth of the patient unincumbered. Yet this kind of apparatus, too, and the ingenious devices of Tiegel, Brat-Schmieden, Karewski, also Seidel's apparatus for after-treatment, will find their place.

In the spring of 1908, when I wished to acquire apparatus for intrathoracic operations, only that invented and manufactured in Europe was publicly known. A careful canvass of the whole field showed that the then existing apparatus was of two general types: one working from atmospheric pressure downward (negative pressure), the other one from atmospheric pressure upward (positive pressure).

But there was none working both ways, and it was just such apparatus that I wanted. I decided to build it myself and, moreover, to build it in this country. I got in touch with my brother, Julius Meyer, an engineer by profession, and succeeded in interesting him in the subject. Together we constructed a chamber for positive and negative differential pressure. It comprises an outer negative pressure chamber, the operating room (Fig. 8), and within the same a positive pressure chamber, the anesthetizer's room (Fig. 9), by means of which combination it is possible to operate either under negative differential pressure or under positive differential pressure, under a combination of the two or under a change from one to the other in the same operation.

The advantage of combining two chambers to form one apparatus becomes apparent also in the feature that the operating table remains in the same location under whatever pressure the operation is performed, and that the moving about of the operating-table from inside to outside, necessary with the large European chambers, if their pressure were changed from negative to positive, or *vice versa*, is here entirely avoided. Further, there is in the new chamber ample elbow-room for the surgeon and his assistant and for an assistant to the left of the surgeon, obtained by means of a projecting head-box. The opening in the latter is closed by a rubber collar, which can be adapted to the size of the neck, and the bulging of the collar is prevented by guillotine shutters. The operator can see the face of the patient and the anesthetizer can see the body of the patient. For the latter purpose a mirror is provided, but the anesthetizer cannot see directly the field of operation proper, so that his attention is not distracted from the anesthesia, but must be given entirely and exclusively to it. The anesthetizer has the face of the patient before him, as is customary in ordinary operations, because he and his assistant are enclosed, together with the head of the patient, in the positive differential pressure chamber. The head of the patient is adjustably suspended. The anesthetizing chamber is so large that there is ample space for oxygen apparatus; it has an air-lock providing access or egress while the pressure is on and without interruption thereof.

No air-lock is needed for the operating-chamber. The pressure in the latter can at any time be raised from negative to atmospheric pressure while the differential pressure required for the operation is being maintained without interruption, so that the door of the operating-chamber leading to outside can then be opened.

The plant is so constructed that a triple reserve is provided in case of break-down. There are two independently driven sets of pumps, one for pressure and one for vacuum, so that in case of any mishap to one unit an immediate change can be made from one kind of differential pressure to the other; in case of accidents to both units a hand-pump is provided, by means of which to maintain the positive differential pressure in the anesthetizing chamber. The motors run at constant speed. The variation of the air-pressure in the chambers is effected by the manipulation of two air-valves, which are set by hand to the desired gauge readings, a matter so simple that mistakes are excluded. The valve is not of the water-column type, but simply a cock. The chamber is of knock-down construction and transportable. The structure in its entirety is very simple and there is nothing in it to get out of order.

The constructive feature distinguishing these chambers from others is the use of two different materials, metal and a fabric, for the obtaining of its two requirements, strength and tightness. Iron can offer the needed resistance to air-pressure; balloon material is air-tight. By the combination of the two into one air-tight structure, the ironwork profits to the extent that it can be treated as a light open framework, easily put together and just as readily taken apart, and that the shops building it will find in the specifications no requirement foreign to every-day structural iron routine; on the other hand, the balloon material profits to the extent that it does not have to sustain the air-pressure, that its distortion into a bulging ball is prevented, and that by the iron frame it is kept to the desired shape. In the positive pressure chamber (Fig. 10) the fabric is arranged inside of the metal frame and in the negative pressure chamber outside of it (Figs. 8 and 9).

As stated above, all the heretofore constructed apparatus can be divided into two groups, one working from atmospheric pressure downward, and one working from atmospheric pressure upward. The new chamber belongs to neither group. It is *sui generis*. In constructing it the aim has been to overcome and remove the limitation of differential pressure chambers to atmospheric pressure as the fixed basis at one end of the difference in pressure, and to enable the establishing of the basis anywhere above or below or at atmospheric pressure at will. This was accomplished by combining two differential chambers to form one apparatus.

In combining two rooms to form one apparatus the following modifications are possible:

1. The rooms may be separate.
2. The rooms may have one corner in common.
3. The rooms may have one wall in common.

In all of these cases the two rooms can be either outside of each other or one inside of the other one.

4. Two rooms may be one partly outside and partly inside of the other one.

For the purpose in hand the combination of two separate rooms, one inside of the other one, was selected.

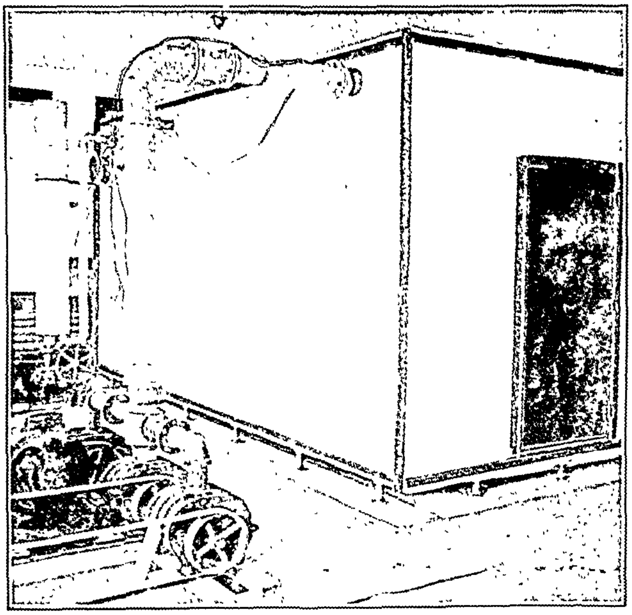


Fig. 8.—Outside view of universal differential pressure chamber (first experiment).

But several of the other modifications will have their use on occasion.

As regards the air-pressure in these rooms the following combinations can be made.

1. The pressures in both chambers deviate in the same direction from open air:
   - A. Inner positive chamber combined with outer positive chamber.
   - B. Inner negative chamber combined with outer negative chamber.
2. The pressure in both chambers deviate in opposite directions from open air:
   - C. Inner positive chamber combined with outer negative chamber.
   - D. Inner negative chamber combined with outer positive chamber.

Positive chamber in negative chamber (2-C) is the combination which I have built and which I have in use at the Rockefeller Institute in New York. It was selected for construction, first, because it enables the nearest approach to operating in open air by building up the differential pressure of half positive and half negative pressure; second, because the anesthetizing-room can be used independently as a positive pressure chamber, and, third, because the chamber can readily be transformed into negative chamber in negative chamber (1-B) by simply reversing the motor of the pump that ventilates the anesthetizing room, whereby the pump is converted from a blower into a suction pump. If the valves are now set to produce a higher rarefication of the air in the operating-chamber than in the anesthetizing room, the latter remains, relatively speaking, a pressure chamber, and, by maintaining the proper differential, the thorax can safely be opened with negative pressure over the mouth as well as over the open thorax. On May 15, 1909, an operation was performed under such conditions with a local barometric pressure of 760 mm. Hg. and 744 mm. over the open thorax and 750 mm. over the mouth of the patient—which is equivalent to doing the operation at a higher altitude.

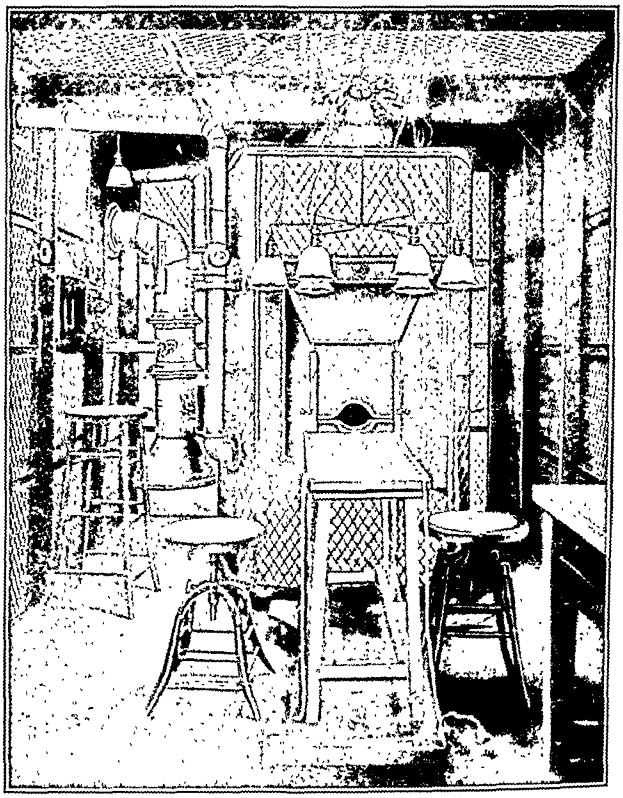


Fig 9.—Inside view of universal differential pressure chamber (first experiment).

This kind of work may become of importance in operating on patients afflicted with pulmonary tuberculosis. Consumptives are sent to higher altitudes for treatment: there may, therefore, be something in lifting a patient during the operation to an altitude many hundred feet above the one where the operation actually takes place and in lifting him frequently back to that altitude in the after-treatment. It may be that internists, too, will find such chambers useful in the treatment of pulmonary diseases.

By merely ventilating the outer room at atmospheric pressure and putting the inner room under increased pressure the two combined chambers become simply a positive differential pressure apparatus.

Thus in this particular combination of rooms an operation can be performed under all of the following conditions:

1. Under positive differential pressure.
2. Under negative differential pressure.
3. Under part positive, part negative differential pressure.
4. Under a gradual change from positive to negative differential pressure, and *vice versa*.
5. Under a repeated change from positive to negative differential pressure, and *vice versa*.
6. Under negative differential pressure at an altitude above sea level higher than that of the place where the operation is performed.
7. Under negative differential pressure same as 6, but at gradually or repeatedly changing altitudes.

The foregoing enumeration comprises all the various conditions under which differential pressure operations can occur, and this apparatus is, therefore, named a "universal differential pressure chamber." In contradistinction to it the narcotizing-room, when independently used, is named a "positive differential pressure chamber," because it must always and under all conditions have a higher pressure inside than outside of it.

The combination, inner positive chamber in outer positive chamber (1-A), is not likely to be used. Its effect would be equivalent to lowering the open thorax of the patient into a shaft below the surface of the ground and depressing the mouth of the patient still further.

On the other hand, the remaining combination, negative chamber in positive chamber (2-D) is again of importance, though not in thoracic surgery, because negative pressure at the mouth and positive pressure at the open thorax would accentuate the pneumothorax. But in brain surgery this combination of chambers will find its place. By means of it the blood can be drawn away from the head and by varying the pressure we can control the quantity of blood thus temporarily withdrawn from circulating through the heart. In this combination the patient's body is put into the inner room.

The positive differential pressure chamber described in this paper (Fig. 10) was built to withstand hard usage. It has been put up and knocked down many times. It was first erected in the iron works, then knocked down, transported to another factory for completion and assembling with parts constructed elsewhere. It was there erected and tested, then knocked down and transported to the Rockefeller Institute; there erected, used in operations on dogs, knocked down and transported to the German Hospital in New York; there erected, used in operations on patients, knocked down and transported to Philadelphia; there erected in the Jefferson Medical College Hospital for demonstration before the American Surgical Association, knocked down and transported back to the German Hospital in New York, and on arrival there went together with as little trouble as it did when first completed.

A structure has to be strong and solid in all its parts to endure such treatment without becoming dented and twisted and thereby troublesome and expensive by needed repairs. A chamber built to remain at one place may be built lighter. But the rough handling that this German Hospital positive differential pressure chamber in its many migrations was subjected to by truckmen and on the railroad without suffering damage thereby proves its fitness for use in war, and it was partly with the object of testing it for military requirements and under something like war conditions that this chamber was so many times knocked down, carted from place to place and re-erected. On an average it took one man and a helper about one hour to knock it down and the same number of men about four hours to erect it again ready for use. The time can probably be reduced should the work be done by military men of the sanitary corps, specially drilled for the purpose.

Mention should not be omitted of the fact that with the positive differential chamber artificial respiration was produced in a case of collapse by rhythmic movements of the valve handle, increasing the pressure quickly to 12 mm. Hg. and lowering it again to atmospheric pressure.

The chambers are cleaned by using the suction pumps as a vacuum cleaner, by means of which such dust as may be there is removed from the wire frames of walls and ceiling. The floor of the negative chamber is solid and so constructed that it can be scrubbed. In the final construction of the chamber its walls and ceiling will be similarly arranged.

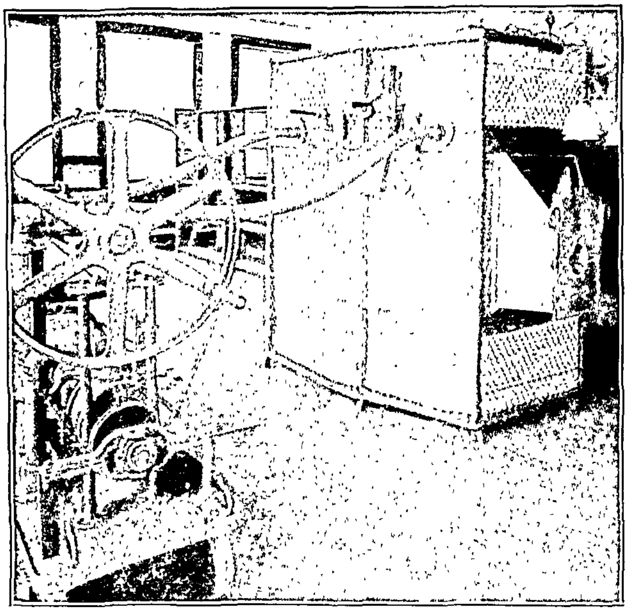


Fig. 10.—Positive differential pressure chamber (first experiment).

Formalin vapors are used for disinfection, which are then ventilated off by the pumps.

When I began to use the chambers, the question arose in my mind: How far can we go in exposing ourselves to such positive and negative pressures? Where is the danger-line? Inquiry developed the fact that even should the negative chamber be exhausted to a differential pressure of 50 mm. Hg., thus being strained to the limit of its capacity, we would, in exposing ourselves to that differential, still be within the limits of our possible every-day experience, as barometric fluctuations of 50 mm. Hg. are nothing unusual in our climate.

On this subject a letter was received under date of Jan. 7, 1909, from the central office of the U. S. Weather Bureau at Washington, D. C., which reads in part:

> The height corresponding to a change of pressure from 760 mm. to 710 mm. varies with different temperatures of the air column. The change of 50 mm. pressure at sea level with a mean temperature of 0 C. would correspond to an elevation of 1,786 feet, at 15 C. to 1,881 feet, and at 30 C. to 1,978 feet. The range of the barometer at New York is more than 50 mm.

The differential pressures used in thoracic surgery seldom exceed 7 or 8 mm. Hg., corresponding to a difference in altitude between 250 and 300 feet; that is to say, the patient's mouth is lowered about 300 feet below his opened thorax. The anesthetizer, however, as well as the surgeon and his staff are not under differential pressure at all; their entire bodies are under one pressure only. Eight mm. Hg. is equivalent to a pressure of about one-sixth of a pound per square inch. In caisson foundations for bridges and tall buildings workingmen are required sometimes to work for hours at a time under air pressures of thirty and more pounds to the square inch, without detriment to their constitutions, which indicates that we are far removed from danger when working in our chamber under positive pressure. As to vacuum I have no such records to offer. We ourselves have been frequently under 16 mm. Hg. negative pressure, drawing the pressure down rapidly, without any perceptible detriment, though feeling a slight pressure on the ear-drums, which, however, disappeared after swallowing once or twice. Hints in this direction can probably be obtained by looking up, for instance, the practice with pneumatic chambers used in bathing institutions; but time has been lacking to do that for this paper.

Again, if the differential pressure in the universal chamber is composed of part vacuum and part pressure, only the patient is exposed to the full differential, while all others are exposed only to the component fractions thereof, the anesthetizer to the positive fraction and the surgeon and those with him to the negative fraction, which still more reduces any possibility of detrimental effects on the users of the chamber.

It was to be supposed that a differential pressure composed of part positive and part negative pressure would act the same as one of equal magnitude but entirely positive or entirely negative. After several operations performed under such conditions, it can now be stated that it does act the same, at least as far as keeping the lungs inflated is concerned. But there seems to be this difference, that abdominal and thoracic breathing come more or less into play according to the variation of the components. Observations along this line are still in progress. Further, there seems to be a difference in the effect of the narcotic under positive and negative pressure. With increasing vacuum component the anesthesia apparently becomes deeper and it becomes less deep when the positive pressure component is increased, which is equivalent to stating that a smaller amount of the narcotic is required under negative pressure to produce a satisfactory anesthesia.

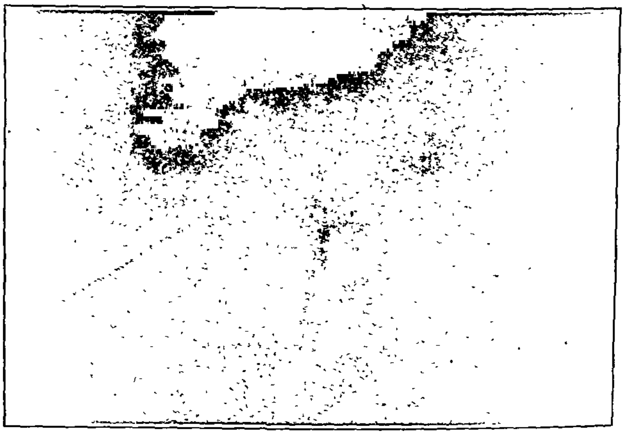
In conclusion, a word about the history of the new apparatus. The studying up, designing and constructing of these chambers has occupied my brother and myself since May of last year, my brother devoting himself entirely to the matter. The work of construction was begun in November of last year. A start was made with the smaller and less expensive apparatus on which to make our mistakes and such blunders as are liable to happen when plodding into the unknown. Therefore, the building of a positive differential chamber was first attacked. It was tested on December 23, was found to work all right and was first used in an operation at the Rockefeller Institute on January 8 of this year. It came up to requirements in every way, so much so that the building of a large universal differential chamber was immediately taken in hand.

It was not carried to completion as expeditiously as the first one, for several reasons. The vital question of dimensions was an open one for a long time, because the finding of the best adapted rooms in the German Hospital, where the chamber was to be placed, offered considerable difficulty. Then, of course, the thing had first to be invented; the many roads leading to Rome had to be gone over, all the many details had to be worked out and tried out and everything had to be boiled down from the complicated to a condition of extreme simplicity in order to make it trouble-proof. Further delays occurred in manufacturing the apparatus. There is practically nothing in the chamber that is standard; almost everything is special and had to be made to order. Difficulty was encountered to find manufacturers at all willing to let such special work interfere with their routine business.

Finally, on May 7, the universal chamber stood completed in the Rockefeller Institute; and a lung extirpation was performed therein on that day with the following gauge record:

Time.		Pressure MM. Hg.		Time.		Pressure MM. Hg.	
Hr.	Min.	Negative.	Positive.	Hr.	Min.	Negative.	Positive.
4	27	0	0	4	44	0	6
..	31	6	0	..	56	1	5
..	32	5	1	..	57	2	4
..	34	3	3	..	58	3	3
..	37	4	2	..	59	4	2
..	41	3	3	5	00	5	1
..	42	2	4	..	03	6	0
..	43	1	5	..	10	0	0

Instructions had been given to the man at the valves to make frequent changes in the pressure components at short intervals, so that the effect of the changes might be observed. At 4 hours 44 minutes, when atmospheric pressure prevailed in the operating-chamber, the door to outside was opened and one of the guests left, the operation meanwhile going on without interruption. It will be remembered that the negative chamber has no airlock. During the next following operation the house telephone suddenly rang outside the chamber, while the gauge recorded 6 mm. Hg. vacuum inside. The vacuum was raised to atmospheric pressure, the door opened, the telephone attended to, the door closed and the vacuum of 6 mm. restored, all without interruption of the operation or disturbance of the differential pressure.



Needle in position for injection of middle branch. Case 46.

Illustrating Article by Dr. Patrick

As stated above, this is no longer a Sauerbruch chamber or a Brauer apparatus. It goes beyond what they conceived. Neither of them can build up the differential of part positive and part negative pressure or go from positive to negative pressure, or *vice versa,* in the course of the same operation. Even in physiologic work, investigators have heretofore never put a dog on which they experimented, first under positive and then under negative differential pressure in the same apparatus. It was always one dog under positive and another under negative differential pressure. An element of uncertainty is thereby carried into their conclusions regarding the relative merit of the two kinds of pressure.

This American-built apparatus enables us for the first time to study the behavior of one and the same animal during one and the same operation, under both kinds of differential pressure, under a change from one to the other, and also under a change of the altitude above sea level. What is more important, it enables us also to study pathologic conditions of man in the same thorough manner, excluding all guesswork, and to find the indications for the pressures best adapted to and safest to use in the many varying degrees of related diseases of human kind.

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[Editor's Note: The three preceding articles are part of a Symposium on Thoracic Surgery which will be concluded next week by the articles of Drs. Powers and Beck and the discussion.]

SEVENTY-FIVE CASES OF TRIFACIAL NEURALGIA TREATED BY DEEP INJECTIONS OF ALCOHOL *

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Two years ago I reported sixteen cases of trifacial neuralgia treated by deep injections of alcohol,[1] and four months later I briefly reported seven additional cases.[2] The method was new, scarcely known in this country; and, further than the fact that injections into the nerve instantly stopped the pain, not many definite statements could be made either for or against it, although it promised well. Even now it is so unfamiliar to the medical public that, having employed it for nearly three years, I feel that my results should be reported.

Needless to say, by trifacial neuralgia I mean neuralgia of one or more branches of the fifth or trifacial nerve; not migraine, which often is called neuralgic headache; not sinus disease; not anything but classical tic douloureux. That the patients with this malady suffer horribly is known to all. That a treatment simple, effective and devoid of danger is a great desideratum needs no emphasis. While the deep injection method is by no means ideal, it is relatively simple, it certainly is effective in relieving the pain, and it is practically free from serious danger. As a radical cure it can not compare with complete removal of the Gasserian ganglion, but, except in a very few and peculiarly skilled hands, the latter operation is difficult and dangerous—very dangerous, indeed, for the majority of operators. To mention treatment by drugs, electricity, heat, etc., is to note the ultimate futility of these measures in the vast preponderance of cases. The various peripheral operations on the several branches of the nerve, including the Abbé operation of dividing them peripheral to the ganglion, have all met a measure of success, but all require an anesthetic, and those which are neither difficult nor dangerous generally give relief for only a brief period. Concerning the deep injections of alcohol I have no thesis to maintain. I wish simply to state my results and to add a few hints, the fruit of experience.

To redescribe the technic[3] seems unnecessary, but I may state that the injections are made with a straight needle about 10 cm. long, 1.5 mm. thick and fitted with a stylet or obturator, the blunt end of which is flush with the needle-point. The sharp point is used to puncture the skin, after which the stylet is pushed home, making a blunt instrument for the remainder of the penetration. Both Brissaud and Sicard, and Lévy and Baudouin have discarded the stylet, using a more slender and sharp needle. I have tried the latter, but prefer the former. The needle is introduced at the lower border of the zygoma, the object being to reach the inferior maxillary division of the nerve at its emergence from the foramen ovale (about 4 cm. deep) and the superior maxillary as it leaves the foramen rotundum (about 5 cm. deep). Deep injections for the supraorbital branch I have abandoned as being too hazardous. When an injection of this branch is needed, which is not very often, I use a "peripheral" injection at the supraorbital notch. In a few cases I have also used a "peripheral" injection at the infraorbital foramen.

The solution used is about 85 per cent. alcohol (not absolute) with four grains of cocain to the ounce. Of this, about 2 c.c. are introduced each time. Morphin and chloroform, formerly used in the solution, I have abandoned, and I also have stopped using 75 per cent. alcohol for the first injection.

As before intimated, this paper is simply a record of results, but tabular statements and summaries sometimes conceal almost as much as they reveal, and so I prefer to make a report of each case, very brief but accurate, so that the reader may come to his own conclusions. An attempt has been made to follow the course of all cases, and when not otherwise stated this has been done up to May 1, 1909, two years and nine months after my first injection. For obvious reasons the first twenty-three cases, already reported elsewhere, are included here.

Perhaps it may not be amiss to add that the cases were all unmistakable ones of tic douloureux; that some of them were frightfully severe; that most of the patients were quite disabled by the disease; that all had tried other forms of treatment; that a considerable number had undergone cutting operations; that some were very old and feeble, and that in no instance have I declined to administer the treatment on account of the severity of the case or of organic complications.

Case 1.—Aug. 2, 1906. Woman, aged 43; neuralgia of eight or nine years' standing. One injection each for middle and inferior branches. No return in two years and nine months.

Case 2.—Sept. 21, 1906. Woman, aged 49; neuralgia for sixteen years, middle and inferior branches; bad case. Five injections; complete relief for four months; slight return in lower branch; three injections; relief. Five months later a few slight pains in middle branch; 2 injections; immediate relief. Seven months after this or a year after the recurrence in the lower branch, this division again showed signs of returning pain. Two injections were made and, although apparently both missed, there has been no further pain in this branch. The last week in June, 1908, a year after the last injections for the middle branch, the patient had a few slight pains in this branch and June 30 received an injection. She has had no more pain; that is, with reinjections, relief for two years and seven months.

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] The Journal A. M. A., Nov. 9, 1907, xlix, 1567.

[2] Cincinnati Lancet-Clinic, Dec. 28, 1907.

[3] See papers in The Journal A. M. A., Nov. 9, 1907.

Case 3.—Dec. 17, 1906. Man, aged 51; neuralgia nine years, two branches; six injections; complete relief. Several months later he was still free from pain. No recent report obtainable.

Case 4.—Oct. 10, 1906. Man, aged 62; neuralgia for over three years, middle and inferior branches; had been operated on twice; had double antrum and frontal sinus disease. Six injections, complete relief; no recurrence in two years, six and a half months.

Case 5.—Jan. 1, 1907. Woman, aged 62; neuralgia for four years. Five injections for two branches, no pain after first injection. Of late some return of pain. Patient very nervous and has numerous complaints. Difficult to say whether or no there is return of the neuralgia, but I think there is, as sometimes eating and talking cause pain. Still, she is practically well so far as the neuralgia is concerned, two years and four months after treatment.

Case 6.—Jan. 19, 1907. Woman, aged 44; neuralgia about six and a half years. Had had two operations. Eight injections for two branches. Complete relief until June 1, then two slight pains; one injection for lower branch; no more pain until Oct. 17, 1908; then again two slight pains in same area. A single injection; no more pain. With reinjections, relief for two years, three and a half months.

Case 7.—Mar. 13, 1907. Woman, aged 50; neuralgia two years, two branches; bad case; three injections; instant relief. Patient remained well for eight months; then she developed an alveolar abscess in the area of the previous pain. After the tooth was extracted the pain continued and three injections failed to do more than mitigate her suffering. An *x*-ray picture then showed that the root cavity communicated with the dental canal; that is, the inflammation involved the nerve. Treatment of the cavity was undertaken by Dr. Gilmer and the pain subsided. In May, 1908, pain began again, apparently starting from a filled molar. The tooth was extracted with relief for some days. Then pain returned, when treating the alveolar cavity again gave relief. Through the summer patient was almost free from pain, but about November 1 it returned and she received three injections, none causing sufficient analgesia to be satisfactory to me. No pain until about March 1, 1909. Injections March 15 and 17, no more pain. With reinjections, relief (not quite complete) for two years, one and a half months.

Case 8.—Mar. 15, 1907. Woman, aged 23. Injections four times for inferior branch, without reaching the nerve. No relief. Patient left and later was operated on by Dr. Harris.

Case 9.—Mar. 19, 1907. Man, aged 60; neuralgia for five years. Five deep and one peripheral injection. Complete relief. Seven months later patient still free from pain. Unable to get more recent report.

Case 10.—April 19, 1907. Woman, aged 75, very feeble, bedfast, neuralgia thirteen years. Seen but once. Single injection; relief at once. There have been two recurrences. Each time patient's own physician has repeated the injections with prompt relief and she is now well, with "no indication of return." With reinjections relief for over two years.

Case 11.—April 23, 1907. Woman, aged 38; neuralgia ten months. Seen but once; single injection; immediate relief. Six months later patient had an occasional slight dart of pain. No recent report.

Case 12.—April 28, 1907. Woman, aged 54; neuralgia two years. Two injections. She has had an occasional slight twitch of pain but considers herself too well for further treatment, two years since injections.

Case 13.—May 5, 1907. Woman, aged 69; neuralgia for one year, first in middle, then in lower branch. One injection stopped the pain and patient declined further treatment until its return a year later, when her own physician repeated the injections (three), since which time she has had no recurrence. Period of relief with reinjections, two years.

Case 14.—May 16, 1907. Man, aged 60; confirmed neuropath; neuralgia for fifteen years; three branches; patient had had three operations. Received a deep and a superficial injection with notable relief. His physician continued the injections and he was completely relieved for a time and practically relieved until Dec. 27, 1908 (one year and seven months), when pains began to be severe. Feb. 3, 1909, I gave him an injection; three days later his physician repeated it and he is again free from pain (May 19, 1909).

Case 15.—May 17, 1907. Man, aged 62; neuralgia for five years, a very severe case. Received three injections for inferior and one for middle branch. Suffering relieved but still occasional twinges. Patient was compelled to leave city; Dec. 9, 1907, returned, having had some pain for three months, but not nearly so severe as before treatment; was given two injections with immediate relief. Two months later pain recurred. Patient given six injections. Relief was complete, but by October there were signs of recurrence and he received two injections. No more pain. Period of relief with reinjections, one year, eleven and a half months.

Case 16.—May 30, 1907. Man, aged 42; neuralgia for three months. Pain limited to supraorbital area but started by touches, etc., in area of infraorbital distribution. Patient received a deep orbital injection with some relief. Not caring to repeat this deep injection, I gave him a peripheral injection for the supraorbital and four or five deep injections for the middle branch. The latter was hard to reach, but finally he was completely relieved and has remained well. Just lately he has had an occasional slight sensation which seems to presage a return of the trouble.

Case 17.—June 12, 1907. Woman, aged 82. Neuralgia began in right inferior branch nineteen months before above date; for last year had also involved middle branch. As patient was feeble the depressing effect of the pain and the inability to eat had exhausted her to a marked degree. She received one injection for the inferior and one for the middle branch, which at once relieved her. I advised further injections but she declined and with the exception of a few slight twinges at rare intervals she has remained well, one year and eleven months.

Case 18.—June 25, 1907. Woman, aged 46. Neuralgia began ten years before above date in middle branch, radiating into supraorbital. Operation five years ago with no relief. I made two injections but failed to reach the nerve and the patient passed from observation.

Case 19.—July 1, 1907. Woman, aged 68; neuralgia of left lower branch for three years. I made two injections but missed the nerve both times and she returned to her home with practically no benefit.

Case 20.—July 3, 1907. Woman, aged 46; neuralgia for five years, principally in left lower branch. In this case I also failed to strike the nerve in two trials and the patient left.

Case 21.—Sept. 11, 1907. Woman, aged 54; neuralgia in right lower branch began ten years before above date but until the last five weeks had not been very severe. An injection was given with immediate though only partial relief, and as I could not guarantee a cure with one more injection the patient decided to take no more.

Case 22.—Sept. 13, 1907. Man, aged 77; advanced atheroma, senile heart; word-blind since an attack, evidently cerebral thrombosis, four months before above date. Neuralgia of left lower branch began twenty years before and had remained confined to this branch; from the beginning very severe. As talking immediately started the pain he was obliged to give up his profession (that of clergyman) and had been an invalid for the last twenty years. On account of the frightful pain caused by eating he often became weak and emaciated for want of nourishment. For several months he waited for a sufficient lull in his suffering to enable him to make the trip to Chicago. He was given three treatments and has not had a single pain since the first injection, one year and seven and a half months ago. In spite of his age and cardiovascular condition he has gained in strength and weight, and enjoys life.

Case 23.—Sept 28, 1907. Woman, aged 65; supraorbital neuralgia began two years before above date. At times very severe. After a peripheral injection of the supraorbital nerve it was found that pain could be started by touches or rubbing the skin in the infraorbital area, so patient was given one deep and one peripheral injection for the middle branch. This stopped all pain and she has had none since, one year and seven months.

Case 24.—Oct. 23, 1907. Man, aged 66. Pain began about twelve years ago in right middle branch, for the last six months shooting into supraorbital region. Patient took about one-half grain of morphin daily. I gave him an injection for the middle branch with instant relief. He slept all night without morphin and ate breakfast the next morning without pain for the first time in two years. I repeated the deep injection and also gave him a peripheral one for the supraorbital. I advised further treatment, as the analgesia was not marked, but he left for home. In about two weeks the pain returned and he suffered for a month. After that he was more comfortable for some time but is now having pain again and is taking morphin.

Case 25.—Oct. 30, 1907. Man, aged 73; neuralgia began fifteen years before above date in right upper lip but for a long time the lower branch had been involved as well. A bad case. I found the nerves very hard to reach. Patient received five injections for the middle branch and four for the lower, most of them misses. When he left for home he was having practically no spontaneous pain, although it could still be started by vigorously rubbing the face; but he said that he had not rubbed his face like that for ten years. Five months later he reported that he had had no pain in the middle branch area but was having considerable in the lower jaw, though not nearly so severe as before treatment. May 1, 1909, he reports that he has been suffering severely for a month.

Case 26.—Nov. 4, 1907. Woman, aged 62; began to have neuralgia eleven years before above date. Pain in middle and lower branches; numerous remissions. She received three injections for the middle and one for the lower branch with immediate relief and has had practically no pain since; that is, in eighteen months.

Case 27.—Nov. 6, 1907. Woman, aged 56; neuralgia for last six years and no free intervals. Infraorbital and inferior maxillary branches involved. Two injections for middle and one for inferior branch. None of these injections was entirely satisfactory from my point of view, but the pain was stopped, the patient felt "fine and dandy" and insisted on returning to her home. She gained six pounds in the next two weeks. Jan. 28, 1908, she returned, having had some pain for several weeks, though not nearly so severe as before the treatment. I gave her two injections for lower and three for middle branch with complete relief for seven months. She has had no further treatment. One of the injections for the middle branch caused a slight vertical diplopia which disappeared in two or three hours.

Case 28.—Nov. 12, 1907. Woman, aged 66; nervous, poor general health. Neuralgia of twelve years' standing, with intermissions, of left middle branch. Four years ago antrum opened, no relief. Patient received a single injection with immediate relief and has had no pain since.

Case 29.—Dec. 5, 1907. Woman, aged 58; neuralgia began three, possibly five, years before above date, right middle branch. Patient has arteriosclerosis, mitral regurgitation, cardiac hypertrophy and albumen in the urine. She received four injections, none of which was entirely satisfactory to me, but there was no return of pain for more than a year (Jan. 5, 1909). Her physician then gave her two injections. The second one relieved the facial neuralgia but the patient developed pain "all over the body" and her general health has failed. More definite details not obtainable.

Case 30.—Dec. 27, 1907. Man, aged 72. Pain began five and a half years before above date in left lower branch. About three weeks before coming to me his physician had given him three deep alcoholic injections with no benefit. I gave him three injections (the first of which missed) with complete relief. He remained free from pain until about July 1, 1908 (six months), when it began to return, and in November, 1908, his physician gave him two injections with considerable but not complete relief. In April, 1909, his physician again injected with some benefit.

Case 31.—Dec. 28, 1907. Woman, aged 62. This proved to be my most disastrous case up to this time. Pain began in right middle branch in the spring of 1905. For a year it was not very bad, then gradually grew worse, and for the last two or three months had been very severe. Six or eight weeks before date of treatment pus was discovered in the antrum but treatment of this by an expert afforded no relief. I injected the middle branch, but very imperfectly, and caused not only a deep hematoma but also a marked paresis of the external rectus, causing diplopia. Three days later the sixth nerve palsy was better, I repeated the injection and again failed properly to reach the nerve. Three days after this, under gas anesthesia, I did a third injection, this time with more success, as the analgesia was marked, and there has been no neuralgia since. But this injection rather increased the palsy of the sixth nerve so that the eye could not be turned outward beyond the middle line. The analgesia, too, involved the eyeball and caused a peculiar and uncomfortable feeling. The diplopia disappeared in about two months and in about two months more a careful examination by Dr. Burch of St. Paul, to whom I am indebted for the subsequent history, showed no trace of heterophoria. But, probably owing to anesthesia of the cornea, there remained a persistent tendency to irritation of the eye and to keratitis, requiring careful attention. In June, 1908, Dr. Burch informed me that the eye was doing well. Later in the summer the patient developed a corneal ulcer which healed but left an opacity. "Sensation in the cornea is still much diminished and there is some interference with normal lachrymation in this eye, with a catarrhal conjunctivitis which she keeps clean. There is no return of the tic douloureux." (Dr. Burch, May 16, 1909).

Case 32.—Dec. 30, 1907. Man, aged 52; neuralgia of two years' standing, mostly in left lower branch, though middle one is involved. Patient received two injections for the former with complete relief. I meant to treat the middle branch as well, but the patient suddenly left the city. For ten and a half months he was entirely free from pain. On Jan. 12, 1909, I injected the left lower branch with partial success. Immediately after this treatment the patient disappeared (I believe an alcoholic flight) only to return on January 24 for further treatment. Owing to his inebriated condition this injection was difficult and unsatisfactory. I declined to treat him further until he sobered up and he left.

Case 33.—Jan. 13, 1908. Man, aged 59. Neuralgia of left middle branch of ten years' standing and severe. Injected middle branch with immediate relief but the analgesia was slight and transient so I repeated the injection the next day but again failed to reach the nerve properly. The patient had to leave town. He was free from pain about six weeks; then it began to return. Over a year later, having received no treatment, he was suffering less than before the injections.

Case 34.—Jan. 18, 1908. Woman, aged 69. Severe neuralgia right inferior branch of about eight years' standing. Between May, 1905, and Nov. 28, 1907, five peripheral operations had been performed. The last time the operator had gouged open nearly the entire dental canal and scraped it. This gave no relief; rather made patient worse. I made an injection but the patient would not or could not hold still and I missed the nerve. Three and six days later I repeated the operation under gas with good results and she has had no pain since, one year and three months.

Case 35.—Jan. 22, 1908. Man, aged 74; chronic nephritis, arteriosclerosis, enlarged heart. Typical neuralgia, lower branch, of ten months' standing. Two injections. No pain whatever until the following October, nine months, when there appeared some slight pains in the middle branch which had not been injected. These pains never became troublesome and the patient died, March 14, 1909, of uremia.

Case 36.—Jan. 30, 1908. Man, aged 53. Pain began ten years before date of treatment in the right middle branch. Eight years before above date he had a very thorough peripheral operation which relieved him for four years. Then the nerve was cut off at its emergence from the skull at the foramen rotundum. This again gave relief for four years. Pain returned about eight weeks before I treated the patient and was as severe as ever. I was not at all sanguine as to results in this case because the nerve had been cut just where I would want to inject it and there must have been cicatricial tissue at this point. Furthermore, the zygoma had been cut across and its relations were changed. In addition, the patient had a large head and a very large, fat face (interzygomatic measurement quite six inches). I was fortunate, however, in reaching the nerve the first time and patient had instant relief. I repeated the injection five days later and he has remained entirely free from pain, one year and three months.

CASE 37.—Feb. 18, 1908. Man, aged 34. Apparently his neuralgia began when he was 7 years old. For the first four years it troubled him for only one or two weeks each year and was confined to the right lower branch. Gradually the trouble became worse and finally invaded the middle branch. From March, 1898, to some time in 1905 he was operated on eleven times, but two of these operations were for a salivary fistula caused by previous operation. A marked facial paralysis was the result of one or more of the operations. At one time the patient took as high as 15 grains of morphin daily. When he came to me he said he was taking only about ¾ to 1 grain daily. From February 18 to April 1 he received three injections each for middle and inferior branches. The first injection for the middle branch failed, but after the second he had no pain and there was no return until April, 1909. The patient said that he had "just lived in Paradise this last year"—the first year he could remember during which he had been free from pain. Injections were made April 27 and May 11, 1909, since which there has been no pain, but the analgesia is not sufficiently marked.

CASE 38.—Feb. 26, 1908. Man, aged 60. Neuralgia, right lower branch, of nearly three years' standing. In August, 1907, lower jaw was trephined and nerve resected, which relieved patient for five months. An injection at once relieved him except for an occasional "prick." Two more treatments were given and several months later he was said to have no return of pain. No recent report.

CASE 39.—March 3, 1908. Woman, aged 73. Pain began thirteen years before above date in right lower branch; eight years before same date extended to middle branch and now involved all three branches. I injected the middle branch with instant relief but evidently did not get the nerve well, as the pain returned the next day. No further injections have been made.

CASE 40.—March 18, 1908. Man, aged 51. A very severe case of ten years' standing. About four months after the onset the antrum was operated on and the infraorbital nerve is said to have been pulled out. Six weeks' relief. In July, 1907, peripheral operations were done on middle and inferior branches by a distinguished surgeon, which afforded considerable relief, but for two months only. The pains were so easily started and so severe that patient could not endure the lightest palpation of the bony landmarks, and washing the face was not to be thought of. Even the ordinary involuntary winking started the pains. He was given gas and the middle branch injected. Immediately after the injection the middle branch area could be rubbed without pain and patient drank a glass of ice water in comfort, feelingly remarking that that was the first glass or cup that had touched his lips for months. He received another deep injection for this branch and three peripheral injections for the supraorbital. Relief was complete until Jan. 25, 1909 (ten months), when slight pains began. Injections were made February 2 and 5 and the patient has remained well.

CASE 41.—March 24, 1908. Man, aged 70. Typical neuralgia began in right middle branch twenty years before above date. At times lower branch had been involved. In this case I had trouble in reaching the nerve. After the first injection he was notably better, but after three treatments in five days he was not entirely free from pain and the analgesia was very slight. As the patient was compelled to return to his distant home I gave him two peripheral injections which entirely relieved him. A year later he was having some pain and had had for some time but not nearly so severe as before treatment.

CASE 42.—March 25, 1908. Man, aged 45; neuralgia began three years before above date. Pain probably limited to lower branch but can be started from middle area. Not a very bad case and patient was given the castor-oil treatment with no effect. On April 6 the middle branch was injected and on April 8 and 11 the inferior one. He was at once relieved and remained well until early in March, 1909 (eleven months), when he began to feel slight "jerks" of pain. Injection given March 10 and patient has been well since.

CASE 43.—April 18, 1908. Woman, aged 41; neuralgia in left middle branch began two years before the date of treatment, extending to supraorbital three months before this date. This patient received five deep injections for the middle branch and a peripheral injection of superior branch with complete relief, but analgesia in the middle area was not complete and four months later pain began to return. At present (May 8, 1909) patient is having pain in middle and inferior areas, though not so severe as before the treatment.

CASE 44.—April 30, 1908. Woman, aged 59; neuralgia for eight years, involving middle and supraorbital branches. She received a deep injection of infraorbital and peripheral of supraorbital which at once stopped all pain. Contrary to my wishes, she returned to her home, but has had no recurrence as yet, one year.

CASE 45.—April 28, 1908. Man, aged 54. Six years before above date pain began in right lower branch and soon spread to middle as well. Within two weeks patient received four injections for the inferior branch and, although the analgesia was unsatisfactory, he was relieved and has remained well except for occasional slight "reminders," one year.

CASE 46.—May 9, 1908. Colored man, aged 48. Five years before above date neuralgia began in right infraorbital area. Three years later antrum opened, no result. The middle branch was injected with instant, almost complete relief, but patient received three more injections with complete relief. After the second and fourth injections there was paresis of the abducens which disappeared in a few days. Four months later pain began to return; two injections, relief for six months; then patient was given four injections, which again relieved him. This was a difficult case. The *x*-ray picture (page 1986) shows needle in position for injecting middle branch.

CASE 47.—May 14, 1908. Woman, aged 53. A severe case of ten years' standing, middle and superior branches involved. For the last five months there had not been an hour's respite, day or night. Deep injection of middle branch and peripheral of upper branch at one sitting. The pain ceased at once but in the next two weeks patient was given two additional injections for the middle branch. About the end of August she began to be annoyed by pruritus in the supraorbital area and on September 26 I injected this nerve, hoping to stop the itching. There was not instant relief but gradual improvement. Apparently this injection caused alopecia in a small wedge-shaped area at the hair margin, but the hair soon grew again. About November 1 patient began to have pain, this time apparently starting from lower branch, which never had been treated. It was not bad and nothing was done until Jan. 24, 1909, when I injected inferior and middle branches with instant relief and the patient has remained practically well, though she has some discomfort of some sort. From her letter it is impossible to say whether she has any neuralgia or not.

CASE 48.—May 17, 1908. Man, aged 36; neuralgia, middle branch, began four years before date of treatment; during last three years also occasionally in inferior branch and for last eighteen months pain sometimes started by touches, etc., in area of supraorbital. The middle branch in this case was very hard to reach. Patient received five injections at intervals of three to five days, and while there was some relief from the earlier ones the last injection was the only one which got the nerve properly. He received one peripheral injection for the supraorbital. The second deep one caused a very slight paresis of the sixth nerve which disappeared in a day or two. He has remained well.

CASE 49.—June 2, 1908. Woman, aged 57; neuralgia for last ten years, middle and inferior branches, sometimes radiating into supraorbital. She received three injections, one for the middle (not a very good one), two for the inferior branch. After the first injection she slept all night; the first time in many years. Relief was complete until late in December, when pain returned in lower branch. Injections of this branch made Jan. 7 and 10, 1909, relieved her and she has remained well.

CASE 50.—June 3, 1908. Man, aged 76; physically senile, enlarged prostate, marked atheroma and a bad heart. Neuralgia of right middle branch for last fifteen years. Injected June 4 and 6. Although the pain ceased entirely the analgesia was not sufficient to satisfy me. Contrary to my wish the patient returned to his home. Within two weeks he was again having some pain. On June 26 I again injected and caused a free deep hemorrhage. Swelling below and above the zygoma was marked and patient complained of headache, evidently caused by the pressure. This pain over right side of head lasted about thirty-six hours and the patient felt weak and "knocked out." The pulse was irregular and none too strong and it was five days before patient felt able to make the trip to his home, some six hours distant. He has had no return of pain and "has good health for one of his advanced years." But apparently the pressure of the hematoma was too much for his diseased vessels and poor heart, as the injection was followed by some necrosis of the hard and soft palate and I infer from his physician's letter that a molar tooth was also lost. These lesions healed, leaving no bad effects except slight stiffness of the jaw joint.

CASE 51.—June 4, 1908. A very nervous and delicate woman of 73; apparently had something like neuralgia fifty, forty and thirty years ago; each time for several weeks. Present trouble began three or four years before above date; now limited to right lower branch. Injections June 5 and 7 with some relief, but far from complete. Patient decided to return to her home. Aug. 6, 1908, her physician reported: "Her face is much better, she is fleshier and her general appearance is 50 per cent. improved." She remained "very much better," though not entirely free from pain, until about April 1, 1909, when she again began to suffer severely.

CASE 52.—June 14, 1908. Man, aged 75; neuralgia for twenty-five years; for the last ten years very severe and for the last five years nearly continuous. Middle and inferior branches involved, with pain radiating into superior. This proved a hard case to treat. Patient received four injections for the middle branch and four for the inferior, besides one peripheral injection of the middle one, but finally was entirely relieved and has remained well.

CASE 53.—June 22, 1908. Man, aged 77; atheromatous arteries; neuralgia of right middle branch off and on for last two years; occasionally radiated to upper or lower branch. As this was not a severe case and patient when seen was not suffering I made two peripheral injections on succcessive days and advised him to wait. He was entirely relieved and remained free from pain until his death five months later, probably from angina pectoris.

CASE 54.—June 26. 1908. Woman, aged 60; neuralgia of lower branch last eight months. I saw this patient in transit and made one injection which did not get the nerve well and from which she received no benefit. On the contrary, she writes me that for three weeks afterward the pain was worse than ever. Subsequently she improved, evidently a period of spontaneous amelioration and not due to the injection.

CASE 55.—June 26, 1908. Physician, aged 49. His neuralgia began in October, 1904. In April, 1906, an eminent surgeon did the Abbé operation, which relieved him entirely for nearly a year and practically for nearly fourteen months. When seen the pain was as bad as ever and, as before, limited to inferior branch. This branch was injected June 26 and 30, with instant and complete relief, but six months later pain began to return and invaded middle area. In January, 1909, he received three injections for lower and one for middle branch. I thought latter should be treated again but patient was entirely free from pain, went home, and has remained well.

CASE 56.—June 28, 1908. Woman, aged 72, with enlarged heart and irregular pulse. Forty-three years ago the lower jaw was injured in the extraction of a tooth. This was followed by severe paroxysmal pain. Soon after, a surgeon in attempting to remove dead bone and cut the nerve, fractured the jaw. After this there was no pain for a year, when it returned. Since then the patient has undergone eighteen peripheral operations, each one relieving her for a longer or shorter period. Paroxysms exceedingly severe. Injection made at once. Relief was immediate but not complete, as she had an occasional pain during the next few days. Four days later treatment was repeated, after which she had only an occasional pain, never severe. Evidently she needed further treatment but was satisfid with the result and prepared to wait. The slight pains disappeared and there was no sign of neuralgia for six months. On Feb. 15, 1909, she received an injection and has been perfectly free from pain since.

CASE 57.—June 27, 1908. Physician, aged 40; neuralgia of right middle branch began over five years before above date. In spring of 1905 it extended to superior branch. In 1906 antrum opened and in August, 1907, infraorbital nerve resected, which gave him not complete but practically complete relief until a few days ago, ten months. Paroxysms now frequent and rather severe. Middle branch was injected June 27 and July 1, and peripheral injection of supraorbital made June 28. Relief was complete and patient has had no pain, although through the winter he was much exposed to wind and weather.

CASE 58.—July 1, 1908. Man, aged 42; neuralgia began twenty years before above date in supraorbital division; a year later changed to infraorbital division and two or three years before above date again began to invade supraorbital. Injection of infraorbital July 1 and on same day peripheral injection of supraorbital. Pain was relieved but the deep injection caused transient paresis of abducens. Patient has remained well.

CASE 59.—Sept. 10, 1908. Man, aged 45; tuberculous hip with sinus since age of 8. Rectal fistula for five years, neuralgia right middle branch for last six years, of inferior branch last seven months, and for two or three months radiating into supraorbital. Numerous paroxysms every day. Patient received five injections for the middle and three for the lower branch; complete relief and no recurrence.

CASE 60.—Sept. 18, 1908. Woman, aged 66; neuralgia of left middle branch for ten years; for last six months so severe that patient's strength had suffered from lack of food. She received eight injections in all, though there was practically no pain after the third one. There was great difficulty in reaching the nerve. April 22, 1909, considerable pain. Patient now better but doubtless will need treatment before long.

CASE 61.—Sept. 25, 1908. Small, delicate, nervous woman, aged 58; neuralgia for four years. In January, 1908, a deep injection was given by another physician with immediate relief. After two weeks there was a little pain and in February injection was repeated with relief for five months. In August she had received three injections with no benefit. I gave her three injections, the first two missing, the third getting the nerve well, since which time she has been entirely well as far as the neuralgia is concerned.

CASE 62.—Oct. 3, 1908. Woman, aged 37; neuralgia of superior maxillary division for six years. Resection of nerve July, 1905, relief for fifteen months. May, 1907, nerve was again resected, the foramen injected with osmic acid and then plugged with a silver screw. Relief for nine or ten months. Supraorbital nerve said to have been divided three weeks before my treatment, but there was no analgesia. I made deep injection of middle branch and peripheral of upper; immediate relief. Patient left the city the same day. Five months later slight return of pain, but patient is still relatively comfortable.

CASE 63.—Oct. 10, 1908. Man, aged 64; neuralgia for ten years; for first five in right lower branch only, for last five in middle as well. In the last four years not a single day free from pain; generally about 150 paroxysms daily. Three injections; complete relief, no recurrence.

CASE 64.—Oct. 17, 1908. Woman, aged 60; neuralgia of right middle branch began three and a half years before above date. Three months before my treatment another physician gave patient several peripheral injections of alcohol with great relief. I made one deep injection with but slight effect and the patient decided to try Eddyism.

CASE 65.—Oct. 30, 1908. Man, aged 58; neuralgia for three years, lower and middle branches, radiating into upper; a bad case. Four months before date of my treatment a well-known surgeon injected osmic acid without result. This patient received two injections for the inferior and five for the middle branch. The latter was exceedingly difficult to get. I tried going in in front of the coronoid process, behind it (below the zygoma) and above the zygoma. The patient was completely relieved, but about the middle of February, 1909, began to feel signs of recurrence. Between February 22 and March 5 he received two injections for inferior maxillary and two for superior. As I could not reach the latter, owing, I think, to the bony conformation, I injected the alcohol at the infraorbital foramen. Patient was relieved and there has been no recurrence.

CASE 66.—Oct. 31, 1908. Woman, aged 63; neuralgia of right lower branch began six years before above date. Two years later evulsion of nerve; relief for a year or more. For last six months pain worse than ever before. Three months before I treated patient a surgeon again operated and gave four injections of alcohol. No relief from operation; some from the injections. I gave her two injections, the first missing. Complete relief and no recurrence.

Case 67.—Dec. 11, 1908. Woman, aged 60; neuralgia for five years, first and second branches involved. Arteriosclerosis and hypertrophy of heart. She received three deep injections for middle branch and one peripheral one for the superior branch. Complete relief. Recently slight signs of return.

Case 68.—Dec. 15, 1908. Man, aged 48; neuralgia began eighteen months before above date in right upper jaw. For last three months lower also affected. Poor general health, dilated heart, and in last three months four attacks of unconsciousness. He received one injection for middle branch and three for the lower. Entire relief and no recurrence. Patient has had no more fits.

Case 69.—Dec. 23, 1908. Man, aged 65; senile; arteriosclerosis, intermittent heart, feet cyanotic. Neuralgia of middle and inferior branches for about one year. Patient received four injections for inferior branch, one deep and one peripheral for the middle branch. He was relieved of pain but this is the most unfortunate case I have had. Immediately following the deep injection of the middle branch the patient showed paresis of the abducens and some analgesia of the supraorbital area and the next day a keratitis which finally eventuated in a superficial ulcer. He had the care of a skilled oculist but left the city and I have been unable to get a later report.

Case 70.—Dec. 29, 1908. Man, aged 74; atheromatous arteries, mitral and aortic murmurs. Severe neuralgia of left lower branch for one year. The first injection missed the nerve. The next day patient had what apparently was a slight cerebral thrombosis and operations were deferred until Jan. 11, 1909. An injection on this date missed, but two days later I struck the nerve at a depth of 5.5 cm., since which time the patient has been entirely free from pain.

Case 71.—Jan. 6, 1909. Man, aged 61; neuralgia for fifteen years, all branches involved. Mitral disease, albumin and casts in urine. Excision of nerves performed seven years ago; partial relief for a year. Patient received three deep injections for middle branch, one for lower and a peripheral injection for supraorbital. Complete relief and no recurrence.

Case 72.—Jan. 14, 1909. Man, aged 47; very nervous; enteroptosis; general health poor. Neuralgia for nearly two years, middle and inferior branches. Three injections, not entirely satisfactory as regards analgesia but relief complete. Patient went home and has had no return of pain.

Case 73.—Jan. 23, 1909. Woman, aged 45; neuralgia began twelve years ago and from beginning involved all branches. This patient had a remarkably large face for a woman, with prominent cheek bones and most unusual thickness of the lower jaw. Apparently the deeper bones were also thick, for I had great difficulty in reaching the nerves. Patient received three deep injections each for middle and inferior branches and one peripheral injection for the first division. Complete relief and no return of pain.

Case 74.—Mar. 9, 1909. Man, aged 46; neuralgia for fifteen years. Pain in middle branch but started by touches in supraorbital and inferior maxillary areas. Four years before above date resection of superior maxillary; relief for one year. Six months before same date four deep injections of alcohol; relief for three months. Three more injections; no relief. I gave patient three injections for lower branch, one deep and one peripheral for middle branch, and he has had no more pain on that side. About Mar. 18, 1909, he began to have typical neuralgia pains in *left* lower area and April 5 and 8 I injected this branch, since which time patient has been well.

Case 75.—Mar. 12, 1909. Man, aged 62; arteriosclerosis, hypertrophied heart. Neuralgia began ten or twelve years ago in right middle branch; a year later extended to supraorbital. Many remissions, once for a year. Now very severe. Four or five years ago wedge-shaped piece excised from upper lip; no relief. I gave patient a deep injection of superior maxillary and peripheral one of supraorbital. Instant relief, no return of pain.

I think that there can be no doubt whatsoever that when the injection reaches the nerve the pain is stopped at once. In this sense I have had not a single failure. The greatest drawback to the method is the uncertainty of reaching the nerve on any given trial. But if the patient is willing to persevere he is practically certain of relief. Of course, in many cases one succeeds the first time.

The danger of the operation is as nearly *nil* as can well be. I know of no fatality and think none has ever been recorded. Nor have I heard of a single case of infection. I have had none in over 300 injections. Disagreeable complications are exceedingly infrequent, my worst, indeed practically all, having been in Cases 31, 50 and 69. In a few cases injection of the middle branch has caused a small hematoma which did no harm and occasionally I have produced transient paresis of the sixth nerve. In this connection it is worthy of note that in the 75 consecutive cases covered by this report 36 patients were between 60 and 70 years old, 13 between 70 and 80 and one over 80.

The procedure is not excessively painful; at least patients do not often complain of it. An anesthetic is very rarely necessary. In four cases I have given gas, but in only one of these (Case 40) was it absolutely required. There is no shock. Most of my injections have been done in the office, and in a few minutes the patients are ready to walk out, though I prefer to have them lie down for twenty or thirty minutes. Queer as it may seem, the alcohol itself causes no pain after a few seconds.

There is no reason to believe that these injections effect a radical cure, though I suppose that occasionally this might be the result. The period of relief to be attained is hard to estimate. A good injection, as shown by marked analgesia, may be expected to relieve for from one to three years, possibly more. One trouble I have had is to get patients to have more treatments after the pain has been stopped. The sufferer is satisfied as soon as relieved.

Reinjections after recurrence and injection in cases in which patients have already undergone peripheral operations seem to be just as successful as primary injections. I have never had occasion to give an injection to a patient who had been subjected to the ganglion operation.

While I do not at all wish to be understood as making a special plea for this treatment, recognizing, as I do, its many weak points, it is only fair to the reader that I should state my opinion that in the majority of cases it is the simplest, least hazardous and best. Should it finally fail, the Abbé or the Gasserian operation is still open to the patient. It will occur to every one that by this means old, feeble and infirm sufferers may be made comfortable at minimum risk until length of years or intercurrent disease leads to the final *exitus*.

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ABSTRACT OF DISCUSSION

Dr. D'Orsay Hecht, Chicago: The conclusions that I have come to concerning the deep alcohol injections are based on an experience with 38 cases to date, in which I may have totaled 150 injections. I can share Dr. Patrick's sense of disappointment in missing the nerve, and, on the other hand, have experienced the agreeable feeling of having produced immediate analgesia in the related area by getting the solution into the nerve, than which there can be no more pleasant sensation for patient and operator alike. My youngest patient was 25 and the oldest 90. In both I had good results. I had one experience in injecting the ophthalmic branch which leads me to the conviction that I shall not do it again. The amount of ecchymosis and edema of the conjunctiva and eye was such that I had to resort to cold applications and scarification. No permanent damage was done, but the condition caused me to feel uncomfortable for several days. In another patient, a bleeder, I was unfortunate enough to encounter hemorrhage, resulting in the formation of a rather large hematoma in the cheek, which was slowly resorbed. The patient was a woman from a neighboring state, who had typical trifacial pain. The diagnosis of the underlying pathology was very difficult. Sinus disease was known to have been present, brain tumor was suspected, and all this in a highly neurotic individual. After the first injection she had relief for about two months. She returned to her home and the recurrence of pain led to surgical intervention in the form of placing a screw in the infraorbital foramen. This was done without relief and the patient in three months returned for further injections, which were likewise without benefit to her.

I should like to call attention to a class of cases thought by some to be trifacial neuralgias, but which are merely minor facial neuralgias. They require to be differentiated, and unless they conform to the well-known clinical description of trifacial disease, I should say that they were unsuited for the alcoholic treatment. When these patients with vague continuous pain are subjected to *x*-ray examination, some underlying pathology referable to the teeth, jaws or sinuses is always revealed. I might add that a small, flexible film placed in the mouth along the borders of the teeth supposedly giving rise to the pain will disclose the dental condition better than an outside exposure. In every case of trifacial pain, whether typical or atypical, I seek to ascertain the underlying pathology with every adjunct to diagnosis at my disposal.

On the whole, my results have been good, although I reiterate what Dr. Patrick has said, that at times I have felt discouraged with the method. I shall, however, continue to do the trifacial injections with alcohol, feeling about them as I did two years ago, that they afford in a large proportion of the cases the best kind of palliation known to me and borne out by my experience of free intervals from pain from the shortest period of four weeks to the longest of two and a half years.

Dr. B. R. Tucker, Richmond, Va.: I recently reported in a local journal thirteen cases of trifacial neuralgia treated by medical means. After trying all medical treatment in one case and it having failed, the injections were tried and proved successful for three months. The patient, a woman of 72 years in very wretched health, came back and the operation was repeated and proved successful again.

Dr. C. L. Dana, New York: In the class of cases that Dr. Patrick refers to as trifacial neuralgia, does this term mean *tic douloureux?* This seems to me a specific kind of neuralgia occurring with peculiar symptoms almost always after the fortieth year in the degenerative period of life. The facial neuralgias which occur in early life are usually sympathetic, but these sometimes take on themselves the typical aspect of a *tic douloureux*. I should like to know whether his successes are not with older patients.

So far as my experience goes in the ordinary *tic douloureux* of the degenerative period of life, when the disease has not been very long standing, the operation seems to work satisfactorily. But in the very prolonged cases a sort of psychosis is added to the neurosis, and the operation does not seem to be of so much benefit.

Dr. Hugh T. Patrick, Chicago: As accurately as I could make the diagnosis these were all perfectly typical cases of *tic douloureux*. Most of these patients had passed the fortieth year. The age question is rather interesting; and those in the thirties (and there were very few of them) were not to be distinguished, by me, at least, from the perfectly typical cases in older persons; that is, the intermittent, short, violent, exceedingly severe pains with intervals of remission of various length. The pains would be started by a slight sensory stimulus on the face, such as washing it, touching it, eating, talking, etc. Really typical trifacial neuralgia is something apart and different from anything else and the diagnosis is not difficult. As regards the operation, I would say the older the people the easier the job; the tissues are soft, they are not fat, the distance to go is not so great. The tissues being soft, one can handle the needle better after it is in and can feel out the way more easily in the old people than in the younger, more vigorous and more muscular patients, in whom the fasciæ are tough and hard and in whom there is considerable muscular mass. Those are the cases which have been difficult as a rule; although occasionally in an old person I find bony trouble.

Another thing that I am generally asked is whether I give an anesthetic, and whether the injection itself is very painful. I do not give an anesthetic as a rule. In most of these cases the operation, if you may call it such, is done in the office, although I can not say that I advocate that particularly, only it has been convenient to do it so. In a few cases I have had gas given, once in the case of a woman who had a good many injections, the disease being of seventeen years' standing, always with success, and who at present is perfectly free from pain. She objected to the discomfort of the injection and had gas a number of times. One patient was such a bad case, also of long standing, that I could not even palpate the face, let alone scrub and clean it, without causing this terrible pain. When I put my finger on the malar bone to feel the process the man could not keep still—the exceedingly lancinating pains were too much for him. I gave him gas and then the injection and when he woke up he was free from pain. I rubbed his face with ice water and handed him a glass to drink; he was afraid to try it—he said he didn't want to—but he finally drank it and said: "That is the first vessel that has touched my lips for four months." His wife had fed him with extreme care from the other side of the mouth with a teaspoon so as not to touch the side of the face where the pain was.

One old woman who had had something like nine operations and was exceedingly nervous and hypersensitive could not or would not keep still and I missed the nerve entirely. She then went into a hospital and I gave her two injections under gas. That is about a year and eight months ago, and she has remained entirely free from pain since. The injections after other operations are interesting. I have given injections after all operations except the Gasserian operation. I never have had a case in which the Gasserian ganglion had been removed; but I have had one after an intracranial section of the nerves; also one case in which a screw had been inserted into the infraorbital foramen, and those injections were as successful as the others.

CERTAIN HITHERTO UNPUBLISHED DATA CONCERNING THE INSANE

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One of the most natural and most common of questions concerning the insane, as they are found massed in a hospital, is: "What becomes of them all?" Oddly enough, this question has never been fully answered. At first glance the question seems easy to answer, but a search among the common tables shows that it has not been found easy.

Seeing this, I was led last year to attempt a tabulation (Table 1) which should show what became of them, so far as hospital records answer that question. That is, of a given consecutive or average number of admissions of patients having the average of characteristics I would like to show how many die in the hospital, how many leave "recovered," how many leave "improved," how many leave as "unimproved," and how long it takes to secure each of these results. While this table is closely exact as to the shorter durations, it is yet, of course, and as a whole, a "close approximation," and is derived from a study of the cases in the Rochester State Hospital. It also disregards a study of what may become of patients after six months of probation and discharge.

Table 1 assumes 1,000 consecutive admissions of insane patients, and then, keeping to the same individual cases, and disregarding all subsequent admissions, follows these 1,000 persons till all are disposed of under one of four headings: (1) "died," (2) "discharged as recovered," (3) "discharged as improved," (4) "discharged as unimproved."

TABLE SHOWING TERMINATION OF CASES OF 1,000 NEWLY ADMITTED INSANE PERSONS

Years of Stay in Hospital.	Died.	Discharged, recovered.	Discharged, improved.	Discharged, unimproved.	Remaining.
During 1st year........	150	160	150	5	535
During 2d year..	50	27	69	5	384
During 3d year.........	40	5	25	4	310
During 4th year........	30	3	13	4	260
During 5th year........	20	2	5	3	230
During 6th year........	15	2	3	3	207
During 7th year........	15	1	2	2	187
During 8th year........	14	...	1	1	171
During 9th year........	13	...	1	1	156
During 10th year........	13	...	1	1	141
During 11th year........	13	...	...	1	127
During 12th year........	12	...	...	...	115
During 13th year........	11.	...	...	...	104
During 14th year........	11	...	...	...	93
During 15th year........	10	...	...	...	83
During 16th year..	10	...	...	...	73
During 17th year........	10	...	...	...	63
During 18th year........	9	...	...	...	54
During 19th year........	8	...	...	...	46
During 20th year..	7	...	...	...	39
During 21st year........	6	...	...	...	33
During 22d year.........	6	...	...	...	27
During 23d year.........	5	...	...	...	22
During 24th year..... .	5	...	...	...	17
During 25th year...... .	4	...	...	...	13
During 25th to 30th year..	8	...	...	...	5
During 30th to 35th year..	4	...	...	...	1
During 35th to 40th year..	1	...	...	...	...
Totals	500	200	270	30	

I think that most people, even those acquainted with the insane, will be surprised at some of the items. I will call attention to some of them.

1. Nearly one-half the cases (465 out of the 1,000) are terminated before they have been one year in the hospital.

2. About one-fifteenth of the patients (150 out of the 1,000) have died before one year of their residence is over. This is partly due to the admissions of "seniles" and "paretics," but partly to the little-noted indirectly fatal character of the acute stages of insanity.

3. A very large number of patients stay out in the world as "improved." I do not make allowance in this table for "relapses," but, as hardly ever more than one patient out of ten relapses, even if these be allowed for, yet rather more patients go out and stay out as "improved" than go out and stay out as "recovered."

4. It takes approximately forty years to terminate all the cases. The older patients live about as long as they would if not insane.

THE LIABILITY OF DIFFERING AGES TOWARD INSANITY

It is commonly said, and all hospitals have tables which show, that the most common age to become insane is about the ages 30 to 35. This is true as to the occurrence of the greater number of cases. It is instantly assumed, however, and is commonly stated that the greatest liability to become insane is at such ages. This is not true.

The reason that it is not true lies in the fact that the number of people living is less at each succeeding age. Indeed, the age of nearly one-half the population living is less than 20 years, and yet very few cases of insanity come from that period.

To illustrate this, suppose there are in a community 1,000 people of the age of 55 and 3,000 people of the age of 25. Now, if 10 people from the 1,000 of the age of 55 go insane, and if 30 people of the 3,000 of the age of 25 go insane, then there will be the same percentage liability at each age. Yet the actual numbers are as 3 to 1.

Clear as this seems, I find no table incorporating this fact or in any way recognizing it as a vital and important practical truth. Table 2, computed by comparing the total population of Minnesota with its total insane committed, is formed to show the actual liability per million, and also the actual percentage liability as between the different age decades.

COMPARATIVE LIABILITY TO INSANITY IN EACH DECADE

Age by decades.	No. living in each age in Minn. (census, 1900).	No. insane admitted in Minn. in 1901-1902.	No. insane of each age decade *admitted* in Minn. per million people living at that age in Minn.	Proportionate chance of becoming insane at each age decade, as compared with other decades, in percentages.
				Per cent.
Under age 20....	807,978	54	66.8	.410
From age 20-30..	309,281	380	1257.7	7.727
From age 30-40..	252,248	522	2069.3	12.710
From age 40-50..	172,688	379	2194.2	13.481
From age 50-60..	103,189	218	2112.6	12.980
From age 60-70..	63,388	122	1924.6	11.824
From age 70-80..	31,026	78	2514.0	15.447
Over 80	7,494	31	4136.6	25.415
Totals	1,747,292 (People in Minn.)	1,793	16275.8 (Sum of relative chances.)	99.994

Column 4 is obtained by multiplying Column 3 by 1,000,000 and dividing by Column 2. It is from the proportion: "807,978 is to 54, as 1,000,000 is to the required number."

Column 5 is obtained by dividing the chances per million of each decade by the total number of chances. It merely gives the chance of each decade as compared with the whole in terms of parts of 100. It is a relative percentage.

The caution must be added that this last column does not show the percentage of insane committed, but only the relative chances of becoming insane in one decade as compared to the other decades and as compared with one hundred chances. If there were an equal number of people at each age, this would be the proportion committed from each decade.

A Case of Displacement of the Descending Colon.—Mahmoud Hamdy and Mustafa Fahmy Sorour, of the school of medicine, Cairo, Egypt, state (*Jour. Anat. and Physiol.*, April, 1909, xliii, 242) that it is quite common to find considerable variations in the positions of the various parts of the colon in Egyptian cadavers. There have been reported from Egypt a case of intestinal obstruction, in which the pelvic colon, on post-mortem examination, was found to be 83 cm. in length (1 cm. less than the longest recorded example), a colon passing obliquely across the body postperitoneally, from the cecum to the splenic flexure and the case described below, in which the pelvic colon lay as an inverted distended U-shaped tube in front of and adjacent to the cecum, appendix and distal end of the ileum, in such a position as to give considerable confusion and embarrassment if it became necessary to perform colotomy or to examine the region of the appendix. "The whole oblique extent of the colon, from the splenic flexure to the pelvic colon, was placed behind the peritoneum, which covered only its anterior aspect. The whole of the left side of the abdomen below the level of the kidney was devoid of any colic contents. The root of the pelvic mesocolon was in contact with the cecum, and there was a very deep and narrow cleft between the two, occupied by the appendix and partly roofed over by a peritoneal fold passing from the pelvic mesocolon on to the anterior surface of the ileum and cecum."

THE PLAGUE ERADICATIVE MEASURES (SQUIRREL CAMPAIGN) IN CONTRA COSTA COUNTY, CALIFORNIA

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> The hypothesis of an epidemic (or more properly an enzootic, as we are speaking of animals) has greater chances of being true. This enzootic is prevalent in a permanent manner in one species of animals which is found in the mountains of Asia. From this animal the virus is automatically propagated to the rat and from the rat to man. Plague seems thus to be an accidental disease in the rat as it is in man, and it is necessary to trace further back to discover the animal which acts as the host for the bacillus pestis. Beliatsky and Reschtnikoff first, and Zabolotny later have drawn our attention to a rodent of Mongolia which they believe to be this animal host. This rodent is a sort of marmot, the *Arctomys bobac* or *tarabagne* which presents from time to time lymphatic swellings. The natives hunt it for eating purposes and also on account of its fat. According to these three Russian authors the inhabitants of certain uncivilized districts of Siberia receive plague periodically from this animal. The intermediary to the rat might thus be exterminated. One understands the full importance of this discovery if it should be confirmed. To eradicate plague forever from the surface of the globe it would be sufficient to declare a war of extermination no longer against the rat, which is cosmopolitan, but against this rodent of Tibet from which the disease spreads to every part of the globe. *La Pathologie Exotique,* LeDantec.

For several years human deaths from plague have been a matter of annual occurrence in Contra Costa County, and it has been known that for at least the past four years some epizootic has been spreading among the ground-squirrels of that region. This animal, the *Citellus beechyi,* resembles the *Arctomys bobac* very closely in habits and appearance, and it is not at all improbable that it bears a similar relation to the perpetuation and distribution of bubonic plague to other species. Ranchers and others who have observed the squirrels closely state that in 1904-5-6 they died by the thousand. They would emerge from their holes and stagger about as though they were drunk, and on many occasions it was possible for one to kill them with a stick. Their fur was turned the wrong way and in some instances they were emaciated, and presented swellings beneath the jaws or in the axillæ. Numbers of them were seen crawling on the ground in a dazed condition, apparently having lost all sense of direction, blunderingly trying to find their holes. It is not at all improbable that some were suffering from the pneumonic form of the disease. Several very intelligent ranchers who took the trouble to open the bodies state that the lungs were dark red in color and resembled liver in consistency. In many places the squirrels died in such numbers that the buzzards came in great flocks, and the air was redolent with the odors of the decomposing bodies. Up to that time the squirrels had been a great pest, levying a heavy annual tribute on the products of the farmer. On some of the ranches they existed in such great numbers that "the entire hillsides seemed to move with them." In one part of the county the vineyards had to be surrounded with sheet-iron fences which extended two feet below the ground and three feet above, in order to prevent the squirrels from destroying both the grapes and the vines. Even yet there remain valleys where they are so plentiful that one may see hundreds of them in a few minutes' walk. They may be observed playing about or eating the grain and seeds on which they subsist, and usually there are one or two sitting bolt upright by the entrance to the burrow. On the approach of the hunter they will whistle, and after a short time it is very easy to recognize the meaning of these signals. If one sharp whistle is given the animal will usually sit still, and it is still possible to get a shot. If he gives one sharp whistle and goes down into the hole, it is safe to wait a few minutes for him, but if he gives one sharp whistle followed by two or three trills in a descending scale it is simply a waste of time to wait for him to come out, because he has been thoroughly frightened and may not reappear for two or three hours. In many cases entire crops were destroyed by the squirrels. As a result this epizootic was welcomed because the rancher realized that the extermination of these in such hordes meant a great saving to him.

The epizootic was assigned to various causes. Some thought that it was due to the blasting with dynamite in the construction of a tunnel through the Berkeley hills. Others maintained that it was due to some disease which had been inoculated in the squirrels by some of the professors at the State Agricultural College, while others affirmed that it was due to a product called "squirrelene," which came into general use about that time.

The epizootic seemed to begin in the northern part of the county along the coast of Suisun Bay, and rapidly spread as far east as the river and south into Alameda County. Some observers have stated that the disease entered the county from the south by way of the Niles Canyon, while others believe that the route of entry was through the Moragua Valley. If an entrance was gained through the first route, the hypothesis that the squirrels were infected by rats brought to this country on the sugar ships from Honolulu might be tenable. If the disease came into the county through the two last-mentioned routes, it would seem more likely that Oakland was the infecting nidus. This, however, is a departure into the realm of speculation, which is of little profit.

Surgeon Rupert Blue, of the U. S. Public Health and Marine-Hospital Service, and Dr. N. K. Foster, Secretary of the State Board of Health, looked into the matter, but it was impossible at the time to go into very extensive investigations. In all probability this disease was bubonic plague, but this could not be determined until the summer and autumn of 1908, when the investigations following two human cases resulted in the discovery of four plague-infected squirrels. The pathologic findings in these animals, which were the first cases of natural plague among ground-squirrels ever seen in America, is the subject of an exhaustive monograph by Acting Assistant-Surgeon William H. Wherry, U. S. Public Health and Marine-Hospital Service.[1] Three of these squirrels were shot and one was found dead. All were discovered within four miles of Bay Point, California. One of these was found on the ranch where a boy died from bubonic plague in the summer of 1908; the others were secured near the coast of Suisun Bay. These findings removed the question of squirrel plague from the field of theoretical consideration and placed it on the solid foundation of fact. It remained, however, to prove the extent of the infection and to evolve, if possible, a plan for the final eradication of the disease, which, having gained a permanent foothold in California, would continue as a perpetual menace to the bay cities, the state and the entire union.

In April, 1909, Surgeon Rupert Blue, acting under the authority of Surgeon-General Walter Wyman, of the U. S. Public Health and Marine-Hospital Service, began an active campaign in Contra Costa County, one of the central counties of the state. It is bounded entirely on the west, north and east by water, its western boundary being San Francisco Bay, its northern boundary the San Pablo and Suisun Bay, its eastern boundary the San

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[1] Wherry, W. H.: Jour. Infect. Dis., v.

Joaquin River and its southern boundary Alameda County. It is also bounded, to a certain extent, on the west by Alameda County and is, therefore, in close proximity to all of the bay cities. Its western boundary line is within nine miles of San Francisco and adjoins Berkeley. Its area is 734 square miles, or about 444,491 acres. Its topography is semimountainous, with broad, rich intervening valleys. Besides the range of hills bordering the western and northern portions of the county, there are two ranges of hills running in a general northerly and southerly direction, with large productive intervening valleys watered by substantial streams. In the center of the county stands Mount Diablo, a rugged peak about 3,800 feet in height. The valleys of Alnamora, Pacheco, Ignacio, Clayton and San Ramon extend from Suisun Bay at Martinez on the north to the southern boundary line of the county beyond San Ramon. Numerous smaller valleys branch off from these, and the great San Joaquin Valley begins in eastern Contra Costa, extending from Mount Diablo on the west to the San Joaquin River on the east. The rich valleys afford an abundant food-supply for the squirrel population, while the wild hill lands shelter them in winter from the rains, and human and animal foes. The proximity of the county to the bay cities, which have until recently been plague-infected, and the constant presence of ships hailing from Oriental ports, in Suisun Bay, demonstrate how easily the infection could have been introduced into the county. The large area to be covered, the wide spread of the infection and the character of the terrain all combine to render the campaign exceedingly difficult. This is still in its infancy, but a sufficient number of infected squirrels have been found to justify the belief that we are dealing with a permanent focus for plague.

The beginning of the campaign was very difficult; a new field of sanitary activity was being entered, and there were no established precedents to act as guides. The herculean proportions of the problem and the great distances to be traversed were overwhelming. The difficulties in securing and distributing supplies and in collecting the squirrels and forwarding them to San Francisco all had to be met and overcome. In addition, the confidence of the people had to be gained, and it was necessary to allay their fears so that they would not feel that the county was going to be injured by the work. The matter of personnel was also one of considerable difficulty. Fortunately there were in San Francisco a large number of men who had been carefully trained in the plague campaign there and who could be relied on to execute their orders in an efficient manner and to meet emergencies without calling on the assistance of an officer. The ideal man for this class of sanitary work is one who is tactful, self-reliant, gentlemanly, a good shot, a conscientious worker, and one who is able to go ahead without the constant presence of an officer.

In the early part of the campaign, while the ground was still moist, eradicative measures were put in force, largely for the purpose of determining the efficacy of the various agents to be used in the extermination of squirrels. A careful study was made of their habits, and it was found that the squirrels spend the winters, that is, the wet months, in the foothills, and that there the young are born.

They are usually collected in colonies, and sometimes they dig very extensive burrows, honeycombing an entire hillside. The openings to the burrow are approached by little paths two or three inches wide, worn in the grass by the frequent passage of the animal. As a rule rather soft ground is chosen for digging the warren, but frequently the squirrels will burrow into hard adobe, and in several places they have dug tunnels in the soft limestone. The earth which is dislodged in digging the burrows is piled in a mound at the mouth of the hole. The tunnel, if the soil will permit, usually makes a sharp drop, and then points up hill a distance of two or three feet. It then forks, one main branch going to the storehouse and the other to the nest. Collateral branches lead off from these two main avenues and usually there are several exits. The nest is formed of straw and pieces of soft bark, and is usually alive with fleas. In the storehouse may be found grain, fruit, and several varieties of wild seeds, of which they are, apparently, very fond. These are transported to the storehouse in the cheeks of the animal. In late April and early May most of the young squirrels have grown sufficiently to travel, and an emigration into the low lands begins. This is not completed until late May, when the grain crops are harvested. By this time food in the hills has become relatively scarce, and the animals, descending into the valleys, subsist on fruit, garden truck and grain. In the former instance their activities are particularly pernicious, and they have frequently been seen to cut off a small branch laden with unripe prunes and drag it into their holes.

It is stated by those who have eaten them that at certain seasons of the year ground-squirrels are a toothsome delicacy. Certain it is that many people eat them regularly, and several families have been found who are in the habit of salting them down in large numbers and using them almost to the exclusion of other meats. In all probability the eating of squirrels is not in itself dangerous, provided they are well cooked, but the danger *lies in the handling of them prior to cooking, that* is, in skinning and preparing them. There are a large number of men who make their living by hunting these animals for the markets, and, until recently, large daily shipments were made. Realizing the danger of such a practice, Surgeon Rupert Blue invited the attention of the State Board of Health to it, and, at his request, a resolution was passed forbidding the acceptance of ground-squirrels for shipment by express companies and common carriers, unless accompanied by a certificate to the effect that they were intended for scientific purposes and carried in sealed metal cans. This succeeded, in a measure, in putting a stop to this dangerous business, but a large number of private hunters continued to come into the county. Dr. Blue then brought the matter to the attention of the mayors of Oakland, Berkeley and Alameda, with the result that the people were warned against the use of ground-squirrels for food. An inspector was also stationed at the Fish ranch on the tunnel road, which is the main thoroughfare into the county, with instructions to inform all persons passing with bags of squirrels of the danger to which they were exposing themselves. As a result, the practice of eating squirrels has very greatly diminished, and the market hunters have been obliged to seek other employment.

Two agents were found which gave good results in the poisoning of squirrels. The first of these was commercial carbon bisulphid. To use this, a piece of waste the size of an orange is saturated with the fluid, and the wet ball placed in the mouth of the squirrel hole. Earth is then tamped tightly on it so that the gas which is generated may have no opportunity to escape. All of the holes of the burrow are treated in this way. In some instances the ball is placed deeply in the hole and then ignited. This is more or less dangerous, as an explosion occurs, and, while the gas is thus disseminated to all parts of the warren, its action covers only a limited period of time, and is, therefore, not as certain as the first method mentioned. Experiments are now being made with carbon bisulphid shells, which may prove rapid and efficacious means of squirrel destruction. The shell is made of waxed paper which is loosely packed with waste. Leading into it on either side is an isolated wire, the bare ends of which almost meet in the center of the shell. Just prior to using, the waste is saturated with carbon bisulphid. When the electrical current passes through the wire it sparks across the gap, thus igniting the bisulphid and producing an explosion. If one of these were placed in each hole of the warren and the earth tightly tamped about it, and all discharged simultaneously, it is believed that the shock alone would be sufficient to kill everything in the warren.

Thus far none of the pumps for introducing bisulphid into the tunnels have proved ideal. Many of them are efficacious, but are very heavy and slow in their delivery of gas. It is believed that a light and simple apparatus can be made by attaching an automobile pump to a tube guarded by a valve, and leading to the bottom of a large square tin can, from the upper surface of which would lead a hose for carrying the gas into the hole. By pumping air through the can of bisulphid the gas would be generated and could thus be rapidly forced into the subterranean tunnels. Carbon bisulphid seems to be the ideal agent for the extermination of squirrels in a plague campaign, for the reason that it not only kills the squirrels, but also the fleas on them, and in the tunnels, thus precluding the possibility of infected fleas remaining to perpetuate the epizootic in another colony of squirrels subsequently occupying the same burrow. The chief disadvantages of carbon bisulphid are its high explosive power, its liability to corrode the cans in which it is kept, and its cost, 11½ to 12 cents per pound in the California market. It can not be used when the ground is dry and cracked, and can, therefore, be applied with success only during the wet or winter months.

Sulphur dioxid, if properly applied, would fulfil all of the requirements of an ideal agent for poisoning squirrels. It is cheap and non-explosive. It would kill the squirrel and his parasites. Thus far only one hand-pump for introducing the gas produced by burning sulphur has been found in the market, and an opportunity to experiment with this pump has not yet occurred. Compressed sulphur dioxid, if it could be obtained cheaply enough, would be certain and rapid in its action. In common with all other gases, however, it would be efficacious only when the ground is wet. The fluid obtained on cleaning Pintsch gas tanks has been recommended. It is cheap and said to be efficacious, but it is not easy to secure it in sufficient quantity for carrying on a work of this kind. Experiments are now being made with a view of determining the merit of this product as a pulicide. Should it prove an efficient agent in this regard we will have a cheap and effective weapon.

The second agent which gives good success is poisoned wheat. The poisonous agent used is either strychnin sulphate or cyanid of potassium, preferably a mixture of the two, applied to wheat with a little glucose, or other sweet material, and then dried. The appended formula may be highly recommended:

Strychnin	1. oz.
Cyanid of potassium	2 oz.
Eggs	1 doz.
Honey	1 pt.
Wheat or barley	30 lbs.

Stir eggs well, then mix in honey and again stir. Then put in dry powdered strychnin and cyanid and stir until well mixed. Put wheat in large box or can and pour in the mixture of poison and stir until it is well distributed over the wheat. Stir two or three times during twenty-four hours, then spread out and dry. Before putting it out for the squirrels add oil of rhodium 1 drachm.

This agent is very effective when the food-supply is limited, that is, during the winter months. Great care must be taken in the distribution of poisoned wheat lest domestic animals, quail and other birds be killed by it. It should all be placed in the squirrel hole itself, and never on the surface of the ground. This is especially necessary in pastures when the feed is short, because valuable cattle cropping the grass close to the ground are apt to take it and be killed. This not only entails considerable expense, but also incurs the everlasting enmity of the owner of the animal. It will thus be seen that the ideal time to carry on a squirrel eradicative campaign is during the rainy season, as the squirrels are then localized in the foothills, the ground will hold the poisonous gas and the reduced food-supply will cause the consumption of the poisoned wheat.

There is reason to believe that the booby owl, which is a constant companion of the ground-squirrel, occupying the same burrows with him, may play an important rôle in the dissemination of the epizootic. It is thought that this bird, flying from burrow to burrow, may carry infected fleas for long distances. If this be found true, the problem of the eradication of the epizootic will be greatly complicated thereby. Some of the ranchers of this vicinity firmly believe that the booby owl does not harbor fleas, and state that it will transport horse manure long distances for the purposes of lining its nest. Their contention is that the ammonia generated by the decomposing manure will inhibit the growth and multiplication of fleas. As yet no opportunity has occurred to disprove or verify this statement.

Phosphorus has not proved as useful in the destruction of ground-squirrels as in the poisoning of rats. It is dangerous to handle, and serious fires may be started with it. After a few days' exposure to the open air and the bright sunshine it quickly loses its toxic power, and it is, therefore, not recommended for this work.

When there is a sufficient fall of water, flooding the squirrel warren will drive the squirrels out very effectually. If men are stationed around the edge of the colony with guns or clubs great numbers may be slain; but flooding is useless unless this is done, because the squirrels will simply migrate to the high lands, to return as soon as their burrows are dry.

It has been hoped that some use might be made of the natural enemies of the squirrel in this campaign, but no one of the known natural enemies is ideal for this purpose. The coyote, wolf, fox, badger, skunk, mountain lion, gopher snake, and red-tailed hawk all prey on the squirrel, but each is open to some objection. This matter is, however, being carefully studied out, and some plan may be evolved whereby use can be made of these means of killing squirrels.

Several varieties of traps have been experimented with, but none have proved very successful. A squirrel is a very wary animal, and will not enter its hole if it sees anything unusual therein. So simple a thing as a ball of paper placed in the mouth of the hole will cause the squirrels to abandon that particular runway. Experiments are now being made with snares. These are made of fine piano wire, and it is hoped that in this way a large number of ground-squirrels may be captured alive. This will afford the laboratory an opportunity to study the susceptibility to plague of squirrels from an infected locality, and a few may be captured in the early stages of plague, thus rendering it possible to study the natural form of the disease at close range.

As a result of these discoveries it was decided by Surgeon Rupert Blue, who is in command of the plague campaign on the Pacific coast, that the work of the ensuing summer should consist entirely of scouting, with a view to determining the places in which infection occurred, and the percentage, if possible, of squirrels so infected. A number of men were, therefore, sent into Contra Costa County with an officer in charge. They were stationed, usually one man in a place, at what were considered the strategic points. Each was supplied with a double-barreled, 12-gauge shotgun, a cleaning rod, canvas knapsack, canvas-covered aluminum canteen, ammunition, squirrel tags, cans, chloroform, solder, indelible pencils, report blanks and stationery. A folding cot was issued to each man. The government provided subsistence for employés, but the latter were obliged to provide themselves with blankets, hobnailed shoes and other necessities.

It has been found, after considerable experimentation, that the double-barreled, 12-gauge shotgun is the best agent for shooting squirrels. These are light and, therefore, do not overburden the hunter, and, when well choked, are very effective up to fifty yards. As a matter of economy, however, the hunters do not usually shoot squirrels at a longer range than thirty yards. Rifles have been experimented with, but their use has been found impracticable. The 22 automatic is a handy gun for this purpose, but too frequently the squirrels shot by it escape. The 25-20 kills the animal most often, but it is a high-powered weapon, and the bullet will travel a considerable distance after having passed through the squirrel. This makes its use a menace to man and stock, and it is, therefore, not suitable for this sort of work.

The matter of ammunition has also been very carefully worked out, and it has been found that 3¼ drams of bulk powder and 1⅛ ounces of No. 8 soft shot make the most effective charge. Ground-squirrels are very hard to secure after having been shot. Frequently, even though badly mangled, they will crawl into their holes and thus escape. The ideal charge for securing ground-squirrels for purposes of examination is that which gives the maximum shock with the minimum laceration of the tissues. No. 8 shot is large enough to fill these requirements. It has been our experience that squirrels are most often secured when they are shot on the run, and that almost invariably when they are shot sitting up they will fall into a hole and thus escape. By shooting at the running squirrel the hunter has the double advantage of striking the animal when it is spread out, while at the same time he may choose the place where he wishes it to fall.

The squirrels are secured as soon as shot and the tags immediately attached. This is necessary because they will sometimes revive and crawl away, or the hunter may lose track of them and waste considerable time in hunting for them. If they are tagged as soon as shot there is no danger of tagging them wrongly, and the handling is reduced to the minimum. At the beginning of the campaign it was thought that the best way to secure plague-infected squirrels would be to make a careful search for their dead bodies. The employés were, therefore, instructed to make careful search for dead squirrels in and around colonies in which they were hunting. Out of sixty-seven thus found, not one has proved to be infected. This method has not, however, been abandoned, but little is expected from it, and it is thought that it is not improbable that the plague-stricken squirrels die in their holes.

Dogs are now being trained for the purpose of retrieving squirrels. This will save the hunter a great deal of work, and will enable him to secure almost all of the squirrels which he wounds. It has been found that the early morning and late afternoon are the best times of day to shoot squirrels. They ordinarily do not come out of the holes when it is very warm, very cold or very windy. It is not profitable to hunt in the same colony for more than two or three days at a time, as the squirrels soon become very "gun-shy" and take to earth as soon as any one approaches. Under ordinary conditions a hunter should shoot and secure at least 30 squirrels per day, although when they are very numerous the day's bag may reach 60 or 65. In one instance one man shot 86 in eight hours. It has been found that unless the hunter wears some protection for the shoulder it will become very badly bruised by the recoil of the gun. The best agent to prevent this is a pad of soft felt an inch in thickness, such as is used beneath horse-collars.

With a small number of employés we have been able thus far to send to the plague laboratory in San Francisco for examination an average of 2,000 squirrels per week. It is hoped that with a small increase in the force now at work this may be increased to 3,500 or 4,000 per week. These are taken from all parts of the county, it being the principle that for the present the work shall consist of taking samples of the squirrel population so that we may be able to outline with some degree of accuracy the area at present infected. Each squirrel is tagged to show where, when, how and by whom captured. Usually the label also bears the name of the nearest town, so that if the squirrel should be found infected it will be easier to locate the particular ranch on the map. This is also necessary because there are so many ranches in various parts of the county bearing the same name.

Supplies are secured on contract, and are distributed to employés on requisition. It is not always an easy matter, but a small automobile is used and fifty or sixty miles are covered every day with a load of ammunition, cans and other supplies. By requisitioning early no time is lost by employés in waiting for shells and other munitions.

Employés have been cautioned as to the danger of handling squirrels, and the opportunity to receive Haffkine's prophylactic has been offered them. Several of the hunters have taken this immunizing treatment. All employés have been warned not to thrust their arms down the squirrel tunnels in an endeavor to recover animals which they have wounded. There is not only the danger of being bitten by the squirrel, but some infected fleas may also be picked up in this way. Another point not to be forgotten is that there are sometimes rattlesnakes in the holes. In fact, several employés were nearly bitten in this way. It has been found that a heavy piece of wire with a sharp barb about an inch long on the end is a very effective instrument in extracting wounded squirrels from the burrows. Each hunter carries in his knapsack a ball of waste saturated with chloroform. This is for the purpose of killing the fleas on the squirrels.

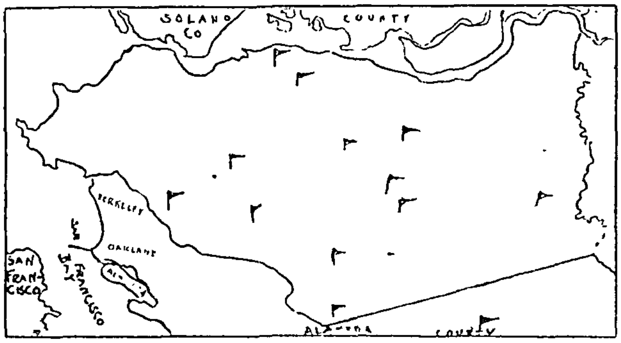
Each evening the squirrels are placed in tin cans specially provided for the purpose. In the can is placed 75 c.c. of commercial chloroform for the purpose of killing fleas; the lid is then tightly applied and carefully sealed with the solder. The can is then tagged and sent by express to the plague laboratory in San Francisco. It will thus be seen that every precaution is taken to protect expressmen and other persons handling the cans. In hot weather the squirrels must be rushed to the laboratory with the greatest expedition, as they are likely to decompose rapidly and generate considerable gas, which will blow off the covers, no matter how tightly they may be secured. This causes complaints on the part of the express companies and their employés. In many instances, however, it is very difficult to forward specimens prior to their decomposition. One hunter stationed in an isolated part of the county makes it his business to know whenever the ranchers in his vicinity are going to town, and gets them to carry his squirrels to the nearest village. There they are delivered to a foreman who ships them by stage to the nearest railroad; thence they are taken direct to Oakland, and by ferry to San Francisco.

Where two or more men are hunting in the same district (or where the bag is unusually large) large milk-cans with especially prepared rubber gaskets are used The lids are also secured by padlocks, one key of which is kept by the man sending the can, the other remaining at the laboratory. The small cans are used but once; the large cans are returned by express.

On the arrival of the cans in San Francisco they are immediately transported to the laboratory by a special messenger with a wagon. They usually arrive in time so that they may be examined within twenty-four hours after they are killed. When the squirrels arrive at the laboratory they are first liberally sprinkled with chloroform, after which they are given a bath of bichlorid of mercury, 1 to 1000. They are then piled on a large lead-topped table. One employé tacks the squirrels to shingles and passes them to a second laboratory assistant, who makes a record of the tag and gives the shingle a number, so that if the tag should be lost it will be possible to tell where the squirrel came from in case it should be found infected. The squirrel thus prepared is passed to other men who have become expert in opening small mammals through their great experience in handling rats during the San Francisco plague campaign. These men are very skilful in recognizing the gross lesions of bubonic plague, and as soon as a suspicious animal is found the dissection of it ceases. The attention of the bacteriologist is called to the squirrel, and in case he is unable to look at it immediately it is covered with a damp towel for the purpose of keeping off flies, should any have found entrance to the laboratory. The dissection is then finished by the medical officer in charge of the laboratory, who dictates to a clerk the findings in each particular case. They are noted on a card which becomes a part of the card-index system of the laboratory. Inoculations are made into guinea-pigs, and the usual cultures planted. All squirrels are carefully examined by the medical officer in charge of the laboratory, but so expert have his assistants become that on two occasions only have they failed to lay aside squirrels which subsequently proved infected. The value of the pathologic findings in the recognition of plague is thus very clearly demonstrated.

As soon as a suspicious or positive squirrel is found the medical officer in charge of the field operations is notified. It is the policy to discontinue work on any colony of squirrels which has presented a considerable degree of infection, it being felt that the present object of the work in that particular locality has thus been accomplished. The accompanying map shows the locations in which infection has been found. It will be noted that they are widely separated.

In all, about 250 infected squirrels have been found to date (Oct. 1, 1909), some having been found in almost every portion of the county in which the men have been at work. It is planned that in the autumn, when the suitable time for poisoning squirrels arrives, and the ranchers have the time to take up the matter, a general campaign of education will be instituted, and an endeavor made to enlist the cooperation of every person holding land in the county. It is hoped that poison may be issued gratis, and that the ranchers will distribute it under the direction of inspectors of the service. The State Board of Health and County Board of Supervisors cooperate in every way in the prosecution of this work.



Outline map of Contra Costa County and contiguous counties. The small flags indicate infected areas.

The commercial aspect of the problem is one which will interest the entire farming population of this region, and while they may not be enthusiastic over the campaign from the point of view of the public health, they are keenly alive to the fact that the eradication of the squirrel means the prevention of a tremendous annual monetary loss. It is, therefore, felt that there will be little difficulty in enlisting their cooperation.

The work which is now going on is directed at the eradication of a permanent focus for plague, and it is felt that the successful completion of this undertaking will rid America of a slumbering volcano of plague liable to eruption and great devastation at any time. This is a departure into a new field of sanitation and may be considered an advance in preventive medicine.

Pathologic Menopause.—H. F. Pitcher, Haverhill, Mass., at the recent meeting of the American Electro-Therapeutic Association, stated that when the ovaries begin to atrophy and menstruation ceases while the nervous energies and nutritive system continue active, causing nervous irritability and vasomotor disturbances, the positive static breeze should be used until the nervous tension is relieved. The negative static breeze may be used if the patient becomes apathetic with a tendency to melancholia, followed by a strong spinal vibratory stimulation. He asserted that he has known mental aberration to clear up from this mild form of treatment. Malassimilation and autointoxication as a result of faulty elimination caused by passive congestion of the excretory organs, should be treated with the static wave current over the spinal region and abdomen. This aids metabolism and eliminates toxic material. When cerebral symptoms and vasomotor disturbances are excessive in plethoric patients, better circulation and tone in the pelvic organs may be produced by the static wave current. If the patient is of nervous temperament with sensitive pelvic nerves, the negative pole from the direct current is used in the vagina. On the other hand, prolonged menstruation or excessive uterine hemorrhage is controlled by the positive direct current, either vaginal or intrauterine, or by use of the Roentgen ray.

FOUR GENERATIONS OF AMERICAN GOUT *

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The following series of four instances of chronic food-poisoning in four successive generations is submitted for its diagnostic interest, as well as because of its value in suggesting for therapeutic and hygienic attention the ground condition underlying similar obscure cases:

Case 1.—The patient first came under my medical observation in 1901, when in her eighty-eighth year. She had always been a full eater, but did not consider herself unusual in the matter of appetite. The joints of the fingers and toes showed unmistakable, gouty changes, and the history given was that of an increasing disability of these small joints. On Oct. 10, 1901, while stepping from a carriage she felt a severe pain in the right knee, which gave way, letting her down on the ground. She was in great pain; the knee when seen by me was hot and considerably swollen, and there was some fluctuation evident above and outside the patella. No other joints were involved. On October 12, 1901, both knees and ankles were hot, swollen and tender. This condition gradually subsided under practical starvation and free evacuation of the bowels, and within a few days entirely disappeared. The temperature was never above 99 F.; the heart showed no sign of involvement; the urine was high-colored, full of urates, and contained a faint trace of albumin.

From that time until the death of the patient one year ago, at the age of 93, there were recurrent mild attacks of a similar nature, invariably controlled by and through the dietary, and by artificial evacuation and cleansing of the intestinal tract. Very frequent had been the occurrence of urticaria, sometimes synchronously with the joint involvement, often alone.

A vegetable, restricted diet enabled the patient to remain entirely free from symptoms, but was so seldom adhered to that the discomfort consequent on an oversuppply of food was usually present. This varied according to the gravity of the offense (measured in terms of food quantity) and its duration, far more distinctly than with the variation in the kind of food.

Case 2.—The patient was an otherwise healthy man, aged 61, of sedentary habits, an excessive smoker, and an admittedly rapid eater. His food-supply, while always generous, never amounted to an apparent excess for the average man. He first came under my care in 1900, shortly before I saw and studied the case of his mother, just described. In 1892 he had been in bed several months with sciatica, following an accidental blow on the head. Since that time more markedly than before he had noticed a fulness of the abdomen, dizziness, belching, fugitive pains in the head, general discomfort, and a sense of heat throughout the body. The occiput and nape of the neck felt heavy, and sometimes even ached. There was considerable flatus and discomfort in the abdomen. The mouth "tasted bad," lights were seen dancing before the eyes, and there was some palpitation. The urine was high-colored and full of uric acid and sodium urate crystals.

Since first studied by me there have been many disappearances and just as many recurrences of this picture. Occasionally patches of eczema would appear over the dorsal surface of the hands, or on the arms. Once a large area (the size of the palm of the hand) appeared swollen, red and tender, in the left hypochondrium, and subsided without notice, as though an angioneurotic edema. There has been considerable stiffness and heaviness in the right leg, particularly from the knee down. This he attributes to the accident and to the blow on the head already noted. Occasionally the movements of the ankle and foot "have not been easy or natural." "This has always passed away." There has occasionally been an aching of the shin-bone and the calf of the leg, and a numbness of the toes. All of the symptoms have recently diminished and many have disappeared.

In May, 1905, during a series of symptoms similar to those just narrated, there appeared a crop of suppurating blebs between the toes of both feet, also a few on the under surface of the toes, and in the cracks and crevices of the under surface of the feet. First seeming abrasions, then blebs, then pustules made their appearance. Lymphangitis of the right leg followed, red lines running to the groin. The patient's condition was a distinctly septic one for two days and then settled to the normal. On milk diet and in bed the feet healed and in a week's time appeared well. Immediately on the resumption of solid food the blebs and pustules would occur, to subside again with its withdrawal. There was an excess of acid, offensive perspiration between the toes, and the tissues seemed to break down under its influence unless kept constantly clean. On diet, rest, complete withdrawal of the tobacco, and free evacuation of the bowels, this condition receded, and convalescence was secured, though only after a siege of three months' duration. The urine during this period showed the same concentration as on each previous occasion; also the precipitation of uric acid and its derivatives. In April, 1909, there was a beginning of a similar involvement of the toes and feet. With the previous experience to guide the line of treatment, however, the duration of the condition was brief, and at the end of a fortnight the skin surface appeared and remained normal.

The indefinite discomfort and the local symptoms on the skin of the body have occasionally recurred, but like their congeners, those of the toes and feet, all have yielded to fasting (tobacco and food) and to intestinal asepsis.

Case 3.—This has been my own, and of especial personal interest, in the light of the two preceding pictures in my immediate ancestors. During boyhood I was able to eat inordinately, and no doubt, as most boys do, so I did. There is little doubt, moreover, that, boy-like, the method of eating was hurried and the mastication imperfect. Nothing untoward transpired in a health record singularly free from need for medical attention until the year 1902, when, while in the midst of a tennis match, I found myself unable to run because of a sharp pain in my right hip-joint. The next day this pain had nearly disappeared, and to such an extent that I was able to play through the tournament.

Frequently through that summer the pain recurred, always suddenly, usually during active exertion, and as a rule continuing for the greater part of a day. Usually it was in the hip, sometimes in the right knee. Rarely the right ankle felt heavy and painful. There was never swelling, and the joints were neither red nor hot. I next noticed that in the morning the hands felt puffy and swollen, the eyes tired, and the throat and pharynx stiff and even painful. The urine was normal and at no time then or since has contained either uric acid crystals, urates (solid), or albumin. Finally, one night after severe exercise, I noticed that although before dinner perfectly free from pain, I rose from the table stiff in the right knee and ankle. For the first time I associated the joint pains with the ingestion of considerable quantities of food, especially after severe exercise, and began to experiment accordingly. I found that up to a certain limit I could eat any and every kind of food. As soon as that limit in quantity had been passed the old joint symptoms, plus those of the face, hands, eyes and throat, would all make their appearance, and remain for a time corresponding to the excess of food. I found that fasting would relieve the distress, and that purgation would do away with it almost at once. There seemed to be little doubt either as to the etiology, pathology, or treatment indicated. A dietary régime was instituted that absolutely removed the difficulty and for a time prevented its return.

Two years ago there occurred another series of symptoms which proved equally perplexing, and was stupidly enough attributed to an entirely mistaken cause. I had been in the habit of using the first joint of my left forefinger as a pleximeter under a metal plexor, in order to employ to advantage both the sense of hearing and the perception of resistance to the stroke. On the morning following a banquet I noticed a crop of tiny blebs surrounding this joint, and a sense of heat (not pain) in the skin and overlying tissues. My pharynx was stiff and sore, my eyes were watering, I suffered *from a* profuse coryza, I sneezed incessantly, and, what seemed exceedingly strange at the time, my hands and feet were too large for gloves and shoes. The urine was absolutely normal. In a day every symptom had disappeared; even the joint of the forefinger had become normal. More than once after this the blebs and slight swelling of this joint reappeared, sometimes with, sometimes without the attendant train of supposedly influenzal symptoms. Invariably the occurrence followed a dietary indulgence between meals, and finally the association became too striking to ignore. I again began to experiment, as frequently as I could persuade myself to endure the discomfort of an old-fashioned influenzal attack. As certainly as I exceeded my heretofore perfectly safe limit, just so inevitably did I pay the penalty. A whole day would go by. Then a general feeling of muscular soreness and exhaustion would appear. The feet and hands would begin to feel swollen, and within twenty-four hours, or much sooner if the excess of food was large, the skin of the first phalanx of the left forefinger would parch and dry up, and later the digital phalanges of the first and second fingers of the left hand also. The dried skin would break out in blebs, with an intense itching that subsided only with a bowel movement, or with distance from the last ingestion of food. The pharynx would become red and granular; it was painful to swallow; muco-pus formed in the nasopharynx, and very frequently the voice would become husky to an extent that was as embarrassing as ridiculous, the cause being known. My nose would run and the tears flow as though I was suffering from an acute cold. On more than one occasion the irritation of the conjunctiva simulated one caused by a foreign body. The secretion varied from a clear serum to a true laudable pus. Almost invariably the ears felt full and uncomfortable. On one or two occasions there was a scaling and cracking of the skin between the toes. All of these symptoms, especially those experienced locally in the feet and hands, seemed to be exaggerated by any severe nervous excitement. Even when the blebs and swelling in the superficial tissues of the phalanges were subsiding, the nervous stimulus of a public discussion or speech, or of the presentation of a scientific paper, or even the stress and hurry of a crowded day's program, would tend to relight their activity, or at least to delay their disappearance. Following a free evacuation of the bowels there was almost immediate partial relief. Sprays, local applications and the internal administration of drugs, made matters only worse. Fortunately the conditions were such as naturally to discourage eating, because the appetite never waned.

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* Read at the College of Physicians of Philadelphia, June 2, 1909.

Finally it became apparent that the quantity of food ingested in the twenty-four hours and that alone was at fault. From that moment the task became simple, though as difficult as it was plain. If too much was being eaten, less would and must suffice, even if it implied, as it does, a military diet. It appeared that there had developed either a tendency to the need of a diminishing amount of food in spite of a persistent appetite, or a more and more evident contraction in my ability to assimilate food-products. That the latter is not the correct explanation of the symptom-complex, which I can produce at will and as readily prevent, seems apparent from the perfect maintenance of health and vigor and bodily weight on an amount of food sufficiently low to prevent discomfort and subjective symptoms. That a diminished need plus a family idiosyncrasy best explains the phenomenon became laughably and painfully clear when the tendency reasserted itself in my child.

Case 4.—This has been studied in my little girl of 4 (now 5) years, a high-strung child, always under nervous tension, who during the past twelve months has had repeated attacks of a type that her mother has labelled "cold," "grip," and everything else except the proper diagnosis, which only within the very recent past has she been willing to admit into consideration. Always overfed, like every other American child of Anglo-Saxon parentage, this little girl has, without warning, repeatedly become hoarse, has coughed day and night, has sneezed when not coughing, and run from eyes and nose until the handkerchief supply has found an end. Relief has been obtained when, and only when, the intestinal tract has been emptied from one end to the other and food altogether withdrawn. Skepticism became so intolerant that I finally challenged the mother to the experiment of deliberately overfeeding the child. She thereby produced a full-fledged, old-fashioned cold that would ordinarily require a week's sojourn in bed. Castor-oil and starvation, with the child at rest in bed, furnished a speedy cure. I have so often watched the process of overfeeding in this case result in the gradual production of the now (to me) classical symptoms, that I can nearly calculate their time of appearance by the amount of food administered.

That this case is not *sui generis* finds ready witness. Only to-day there was sent to me from Virginia a little girl of 12 with the history of a long-standing cold, catarrh of the nasopharynx and constant sneezing. I found her chest and abdomen normal, the lungs and heart absolutely sound. The tonsils were large, and from the nasopharynx dropped steadily a yellowish muco-pus. The mother stated that the child had a poor appetite, but on inquiry from the child I learned that the dietary of the day before had been as follows. Food actually eaten: breakfast, one orange, a plate of cereal, beefsteak, three griddle-cakes and syrup, a glass of milk and one slice of bread and butter; dinner, two helpings of meat, two helpings of potato and of one other vegetable, bread and butter, pickle, radishes and dessert; supper, meat, vegetables and fruit. While in my office this child sneezed several times. Her nasal and pharyngeal mucous membranes were slightly reddened, but otherwise normal. While the case has not been studied to its end, there is little doubt in my mind that this Southern descendant of our English ancestors is suffering from an inherited overappetite and from the need of a lessened food supply.

The danger from such knowledge as is gained through a superficial study of the above series of cases is apparent. It will furnish a strong temptation to the practitioner to term every cold gout, every influenza food-poisoning, every ache and pain lithemia, every joint swelling an excess of food. On the other hand, carelessness of the significance of signs and symptoms leads to disaster. A few days ago I saw in consultation a trained nurse with a tuberculous apex. Tubercle bacilli have since been found in her feces, and a positive tuberculin reaction has been obtained. There was neither a cough nor a particle of sputum to suggest a pulmonary involvement. The case was sent to me as one with a cardiac lesion.

I publish these records, my own among the number, for what they are worth in interest and value as bits of home study and observation and as pointers to the need of a discriminating care in diagnosis. Not without practical interest is the evident association in at least two of these cases of two distinct influences, the toxic and nervous, in the production and accentuation of symptoms. If no other lesson were taught and learned it would be of advantage for us to understand that not every chronic cough and expectoration can be safely regarded as tuberculous in origin; that a moderate amount of food may be an undersupply or an excess for the given individual; and that many a laryngitis and partial aphonia may be rationally attributed to the diet, and cured by a hygienic regime.

1708 Locust Street.

Infant Feeding.—The number of women unable to nurse is much less than is popularly supposed. Madame Dluski, in a thesis delivered at the Baudelocque Clinic, Paris, expresses the opinion that among 100 healthy women, when the necessary conditions of food and rest are present, 99 are actually able to nurse their offspring.—J. M. Connolly in *Hygiene and Physical Education.*

Clinical Notes

A NEW AND STABLE SOLUTION OF GENTIAN VIOLET FOR THE GRAM STAIN

ROBERT KILDUFFE, M.D.
PHILADELPHIA

Unfortunately for the simplification of an often complex problem, we now know that bacteria cannot be divided, as was once thought, into two great classes of Gram-positive and Gram-negative. It is true that many of the varying and contradictory statements on this head may be explained on the score of variations in technic, such as the length of time the stain and the alcohol were allowed to act, and the age of the culture experimented with; but it is nevertheless a fact that organisms repeatedly and consistently found to be Gram-negative will sometimes take the stain very well.

Thus, Zimmermann[1] found that all cultures of the *Bacterium fluorescens* stain well in young cultures; and Lehmann and Neumann[2] found that three out of twelve cultures of the same organism stained beautifully, yet this is a species spoken of in the literature as Gram-negative. The latter workers also stained the bacillus of symptomatic anthrax; and the *Bacillus tenuis,* at first Gram-negative, on a later test with the same technic, stained very well. They state, finally, that "a separation of the individual genera and varieties by Gram's stain now seems scarcely at all possible, since there are found within a single genus all stages, from those which stain well to those which stain poorly or not at all."

Notwithstanding these results, Gram's stain remains a valuable routine procedure, and one which is capable of conveying much information of interest; and, in so far as the gonococcus is concerned, it is a means of differentiating; at all events, it is a measure extensively used.

An intrinsic difficulty, and one usually most apparent just when it is desired to use the stain, is the tendency of the gentian violet solution to decompose, especially in warm weather, with the resultant loss of the entire solution and the time required to make a new one. Having had this happen with annoying frequency, I desired to find some way of obviating the difficulty.

Dr. E. Burville Holmes[3] has had success with the addition of 3 to 5 per cent. of glycerin to the stain, which he keeps in a dark, cool place. This procedure in my hands has not met success, the stain, in some instances, apparently deteriorating even more quickly. A search through the literature at hand revealed very little of interest.

Lehmann and Neumann[3] mention Czaplewski and E. Frankel as recommending, instead of anilin water, a 2.5 per cent. phenol water. This is stated not to decompose so soon as the anilin mixture. Muir and Ritchie[4] also recommend phenol water (1 to 20) and cite Kuhne's method in which the gentian violet is replaced by crystal violet in 1 per cent. ammonium carbonate solution. Beyond this nothing could be found.

After adding various substances to the staining solution without result, the question of a new solvent was taken up. It was found that a weak solution of formalin answered the purpose admirably. To make the solvent, 5 c.c. of commercial formalin (40 per cent.) are added to 95 c.c. of distilled water.

The stain can be made in the usual proportions of 16 parts of the stock solution (saturated alcoholic) of gentian violet to 84 parts of the solvent, or it can be made, as I prefer, in the proportion of 25 parts of the stock solution of gentian violet to 75 parts of solvent. Such a solution has been kept for over eight months in open test-tubes exposed to light and varying temperatures without deterioration.

It can be used just like the usual anilin solution, and decolorizes readily on the addition of alcohol. Should there be any doubt as to whether the preparation has decolorized completely, a drop of anilin-xylol (equal parts), followed by alcohol, will remove any uncertainty.

The advantages of the solution are obvious. It will remain good until the last drop is used; thus it is economical. No modification of the technic is necessary. Molds cannot grow in it. It will keep indefinitely. Preparations made with it are sterile—an advantage not to be overlooked if one is dealing with plague, glanders, or other virulent cultures.

It is hoped that the solution will prove as useful to others as it has been to me in the saving of time, patience, and materials.

2510 South Broad Street.

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[1] Lehmann and Neumann: Atlas of Bacteriology, p. 477.
[2] Personal communication.
[3] Lehmann and Neumann: Atlas of Bacteriology, p. 476.
[4] Muir and Ritchie: Bacteriology, p. 110.

UREMIA, SEQUEL TO SCARLET FEVER

VENESECTION AND RECOVERY *

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Acute uremias, dependent on intoxication from any cause, are of such uncertainty of occurrence and so serious in results that the report of a specific case with its treatment and recovery is not without justification. The case in question was sequel to a typically severe infection of scarlet fever which terminated on the sixteenth day by fall of temperature without complication, with no deficiency in urinary secretion or appearance of albumin.

The initial signs of the attack were first observed four days after the fall of temperature, with the child, a previously healthy boy of 7 years, in bed and on a liquid diet. In the evening of the fourth day, following a cup of broth, the patient was nauseated, but without emesis, and soon fell asleep. In the early morning following, when he had been thought to be sleeping, he was observed to be twitching about the muscles of the face, and to be unconscious instead of asleep. At 8 a. m. the rectal temperature, which had not been above 99 F., rose to 99 1/5 F., and at 2 p. m. was 104 2/5, with a bounding, somewhat irregular pulse of 116, from which rate it gradually rose, with marked irregularity and intermittency, to 136 at 11:30 a. m. of the following day.

Then, for practically twenty-two hours, hourly convulsions were observed and recorded, of varying severity, at times local, but usually general, noticed especially in the muscles of the face and extremities, though there was no marked retraction of the posterior muscles of the neck and no true opisthotonos. Acute and irregular strabismus of both eyes frequently occurred. The only contractures suggestive of focal involvement was, toward the latter part of the attack, the almost continuous twitching of the toes of the left foot. This was not observed in the other foot or in the hands. The child was unconscious during the entire period of the convulsions, for a greater part in a state of coma, though at rare intervals delirous and irritable, if touched or spoken to.

The temperature, during the attack, after rising to 104 2/5 degrees per rectum, varied between that and 103 2/5 degrees. The influence on the circulatory system was most pronounced.

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* Presented before the Jackson County (Mo.) Medical Society, Jan. 13, 1909.

the pulse was markedly irregular and intermittent, varying from 116 to 136, of high tension, though of uncertain quality at times. The heart sounds were, of necessity, not observed closely during the convulsions, but toward the last were distinctly muffled, with a later developed systolic murmur, which lasted well into convalescence.

Edema, which was not present previous to the attack, soon began about the ankles and joints, and was especially marked about the shoulders, neck and face, though there was, apparently, no effusion into any of the serous sacks. The entire glandular system, including that of the skin and kidneys and of the alimentary tract, was inactive so far as any clinical evidence was concerned, for twenty-four hours, there being no perspiration, natural or induced, and no secretion from the mouth or bowels. At the end of twenty-four hours 2 ounces of urine were removed from the bladder by catheter, the only amount secured; this amount was probably residual urine, rather than a renal secretion during the attack.

Toward the last of the convulsive period, between 8 a. m. and 11 a. m., the coma became more and more marked; the skin of the face was very dusky, the body and extremities mottled, and the lips cyanosed. The respiratory rate, which had been from 20 to 26 and quite regular, grew slower and more difficult until characteristic Cheyne-Stokes breathing, of eight to ten respirations a minute, resulted.

The special senses, especially vision and hearing, showed their involvement as the patient later grew conscious and rational. It was interesting, though somewhat tragic, with the question of systemic and local result in the balance, to see the little patient strain his head toward a sound or voice that he heard, but did not distinguish, and then say, "I do not see you"; then, still later, failing to recognize a face or form, speak of the light burning above his head, and finally as he recognized his mother and others about him, show evidence that his special senses were being restored.

This was, in brief, the picture which presented itself for about twenty-eight hours, while Nature unassisted, though not without attempt to assist by the common and generally accepted measures, fought in her effort to overcome an unknown and suddenly developed enemy in her own structure. The measures resorted to during this attack of uremia had for their purpose the endeavor to lower the local and general congestion and circulatory pressure on nerve centers and in vital structures, and to eliminate from the whole system the known retained wastes which Nature was now unable to discharge, and other products of unknown origin and character, but extremely toxic in their influence on all animal tissues, the latter the probable cause of the convulsions.

To be specific, there was endeavor to stimulate all the emunctories which had ceased to act, and to stimulate and to bring to a state of equilibrium a very much disturbed circulatory system. No stress was placed on controlling the nervous system *per se*. Hot packs were regularly and continuously applied for purpose of provoking diaphoresis; calomel and Rochelle salts, with high enteroclysis of physiologic salt solution, were used, with hope both to eliminate and to dilute the toxins present and to assist in equalizing the circulation, and, if possible, to produce diuresis indirectly. In addition, nitroglycerin and digitalin were administered hypodermically for the peripheral circulation and diuresis. With a few other measures and minor details, such was the therapeusis for twenty-four hours—with results clinically negative. No diuresis occurred; the purging and enteroclysis showed no evident stimulation; perspiration did not occur, the skin remaining hot and dry. The circulation and respiration meantime growing weaker, venesection was advised and performed; the median cephalic vein of the right arm, after careful antisepsis, was opened and the child bled of between 8 and 10 ounces. This was at 11 a. m. with the child *in extremis*, a temperature of 103 2/5 degrees, pulse irregular, high tension and 136, with Cheyne-Stokes breathing, eight respirations to the minute; delirium and muscular twitching.

No convulsion occurred during or after the withdrawal of the blood. At 3 p. m. the breathing was 22, regular and easy, the temperature 102 3/5 degrees, the pulse 124 and more regular; the body was covered with perspiration, the child began to answer questions and was less irritable; at 7:45 p. m. 5 ounces of urine, loaded with albumin and casts, were removed by catheter.

From the time of removal of the blood no serious symptoms occurred and steady improvement followed hourly; hot packs, pilocarpin hypodermically, calomel and salines, with a liquid diet, were continued for twenty-four hours; this treatment then being gradually given up, since all the emunctories and in general the body functions were approaching the normal. On the third day, 52 ounces of urine were voided voluntarily, and natural and freely induced perspiration ensued, with marked improvement in the urinalysis. At the present time, several months later, an apparently perfect recovery has occurred.

603 Bryant Building.

COMPOUND FRACTURE OF THE INFERIOR MAXILLA *

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The exposed position of this particular irregular bone, as it is classed anatomically, explains the frequency with which the surgeon is called on to treat it. Fractures of this bone are always due to some form of violence, or to the extraction of a tooth, the usual seat of fracture being the anterior part of the body of the bone, between the mental foramen and symphysis, which is obviously in the line of least resistance, although no part of the bone is free from the possibility of a fracture. The case to which I invite attention bears out this statement anatomically.

Patient.—A very robust negro, aged about 30, an employee of the Seaboard Air Line Railway, blacksmith by trade, presented himself at my office not very long since. An hour before he had been struck with a sledge-hammer by a fellow workman on the right side of the chin.

Examination.—Patient was unable to articulate distinctly; saliva was dribbling, the teeth were uneven; there was an open wound just over the mental foramen externally, with a large spicule of bone projecting; the canine on the right side was very loose. On placing my finger in the mouth I detected the presence of bone, which was rather sharp and mobile, but fortunately had not lacerated the mucous membrane. The fracture was complete, transverse in the long axis of the mandible, with little, if any, antero-posterior obliquity. The displacement could be determined easily by inspection.

Treatment and Clinical Course.—The case was seen so early that very little swelling had occurred. Its reduction was easily effected by manipulation. The spicule of bone having been returned, the wound, which for obvious reasons was not sutured, was made aseptic. Although some of our best men advise the removal of the loose teeth at the point of fracture, I did not do so, but permitted the canine to remain; and this treatment was followed by good results. Retention of the fragments in position was sufficiently secured by bandaging the lower jaw to the upper by a single figure-of-eight chin and head bandage. Patient was sent to the Memorial Hospital and permitted to walk around in his room. Feeding with fluids was satisfactorily accomplished through the natural irregularities of the dental arcades, as there was no space due to the loss of teeth. The wound, being dressed daily, had practically healed on the fifth day. I made the bandage sufficiently tight to prevent the patient's opening his mouth and instructed those in attendance not to permit him to talk, but in the event it became necessary, to educate him to talk through his teeth, so to speak. His mouth was rinsed daily with antiseptic solution. At the end of the sixth day he insisted on going to his home, which was in the city; to this I gave my consent, but rather reluctantly, with the promise that he should report to me on alternate days, which he did and at the expiration of two weeks the bandage was removed, not to be replaced. Careful examination at the seat of the fracture failed to reveal any deformity. The patient now began to partake of semisolid food, reporting to me every third day during the third and fourth weeks; at the expiration of the fourth week he was masticating anything he desired and was dismissed as cured; in other words, I did nothing for him except for the first two weeks.

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* Read before the Association of Seaboard Air Line Railway Surgeons, Raleigh, N. C., Oct. 19, 1909.

While I do not wish to decry the use of the various devices employed in such cases, for I know of many in which the devices could not have been dispensed with, in this particular instance I could see no indication for their employment and therefore I simply used the roller bandage, with a happy result; to have used one of those devices would have been a useless expenditure and cumbrance to my patient.

The points I wish to emphasize in the care of this case are the following:

1. Despite the fact that conditions around railroad shops are rather conducive to infection in wounds of every character, and especially in compound fractures, yet in this case infection did not occur.

2. Not only was there no extraction of a tooth, as recommended by many, but I did not remove the one that was loose.

3. No apparatus of any kind was employed, and at the end of the second week the bandage was discarded and semisolid food masticated, the average case requiring a month.

I admit that this is a distinct departure from the ordinary custom and a considerable risk, but the progress was so unusual that I felt the conditions warranted the trial. It is impossible to obtain a text-book which covers every case, as all of us are willing to acknowledge, and it is in the exceptional case that we have to rely on our own resources.

The spicule of bone is accounted for by the fact that the velocity of the striking force, so to speak, was so high that there was an "explosive effect" and lateral transmission of energy to an extent sufficient to cause this colution of continuity; an example of this is seen in the modern missile. This destructive effect occurs only in certain organs and tissues (such as compact bone or organs containing fluid) because these organs and tissues best transmit the energy imparted by the missile. Had this sledge-hammer been moving at a lower velocity, the shock in the bone would not have been so great, the disruption consequently less, and a complete fracture, without the spicule of bone, would have been the result.

103 North Fourth Street.

Predisposition to Cutaneous Affections After Acute Infectious Diseases.—S. C. Beck has encountered more than 50 cases in which various skin diseases developed in children immediately after some acute infectious disease. This list does not include the numerous instances in which a tuberculous cutaneous affection developed after measles—the peculiar predisposition to tuberculosis left by measles is a fact too familiar for more than passing mention. He also excludes the numerous cases of folliculitis, furunculosis and pyodermitis following typhoid or pneumonia, restricting his study exclusively to the cases in which the skin after an acute infectious disease displayed an exceptional predisposition to the changes produced by toxic substances generated in the intestines, and it also seemed to be changed to a more favorable soil for various bacteria or other noxious influences from without. In 30 of his cases, urticaria, eczema or various rashes developed after vaccination in children free from any such tendencies in the past. He tabulates the details of 51 cases in the *Monatshefte für prakt. Dermatologie*, 1909, xlix, 432.

BETTER ANESTHESIA IN MEDIUM-SIZED HOSPITALS

SOME YEARS OF BROOKLYN EXPERIENCE *

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BROOKLYN

Anesthetically, the hospital field in general, like all Gaul, is divided into three parts.

First come the great institutions which we of the hundred-bed class and two-hundred-bed class regard from afar, ascribing to them unlimited incomes. For them a salaried staff of expert anesthetists is possible, and from them it should be required. Indeed, the public would demand it if the public had any idea of how preposterously ill-balanced the operating-table often is with a resourceful and fearless expert at one end and a scared and clumsy novice at the other.

Next is the small group of private hospitals, which can hardly do better than follow the plan of Baldy and the Mayos, who train an intelligent woman to do that one thing well. Such salaried service is reliable and unvarying. The work is dignified and permanent. Under such conditions it would no longer be considered a makeshift position as it so often is at present by the men of the stop-gap services. Indeed, we may reasonably assume that physicians of moderate ability who have found themselves, in some ways, unsuited for general practice will be glad of a suitable income from such a source.

The third group is by far the largest. The country is covered with hospitals of medium size, in large cities as well as in small towns, where ether is administered in the most haphazard fashion. This is the serious condition which confronts us, and to meet it I am offering the following practical suggestions, as a step toward realizing the development of that perfected anesthesia toward which we have set our faces.

If we must, for the present, ignore ideals impossible to attain, let us see whether we find any hospitals which are able to maintain high standards of ether administration without raising the salary budget. Can it be done? It has been done by offering adequate inducements to men who are qualified, or inducements sufficiently great to cause men to qualify. They may be tendered one at a time, as a man develops, or all at once. These may be: (1) a title, such as "anesthetist to the hospital;" (2) membership on the visiting staff, or assistant visiting staff; (3) privileges, such as (a) use of operating-room for the anesthetist's own cases, or (b) a free bed or free beds; (4) fees for administering anesthetics to private patients whenever the operation fee warrants it; (5) the understanding that the surgeons of the staff will make operations done in private houses contribute toward the income of the anesthetist.

Chosen for fitness, an ex-intern who has shown natural aptitude for the work, or one of the attachés of the surgical staff who will undertake to give a reasonable time to the work, is elected by the professional staff as anesthetist. He appoints an associate or assistant, or more than one, according to the amount of surgical work done in that particular institution.

In this way responsibility is fixed. If patients are drowned in ether, or complications are frequent, or after-distresses prominent we know to whom to go.

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* Given, in abstract, before the American Gynecological Society, April, 1909.

Duties are defined. Whenever the staff rotates the anesthetist shall train the new house anesthetist or determine whether previous experience has qualified him. In the gravest charity operations always, and in others whenever called on by the operating surgeon, he shall give or supervise the giving of the anesthetic. In private cases, when called on to anesthetize, he may claim a reasonable fee, either in the form of a percentage of the fee or, preferably, as a separate charge. The separate charge adds dignity to the work and attracts a better type of man into it.

As to the period which the incumbent should serve, it is to be specifically understood at the time of appointment that the office is not a narrow stepping-stone, but that the work must be seriously undertaken for a time, such as two or three years. The surgeons do not bind themselves in any way to employ this hospital officer in their operations outside of the hospital. They should, however, extend a reasonable hope that if he will better the anesthesia and lessen the dangers in their charity surgery he will be rewarded by calls to their outside work. Success inside the building will eventually make the anesthetist wanted outside. So the situation takes care of itself, and to the young man an assured sum, even $500 or $1,000 a year, is no small matter. In regard to the length of time that the anesthetist shall give or supervise the anesthetics at the time of rotation of service of the house staff, this will depend on the capabilities and quickness of the particular intern who becomes house anesthetist. When a man is entirely inapt serious cases may have to be watched throughout his house service.

In any consideration of anesthesia we must not lose sight of our three obligations:

1. To furnish to the particular patient the best possible anesthesia.
2. To supply to the general public as many members of the profession as may be who will have a fair working knowledge of the administration of anesthetics. And our duty shall always be, first to the members of the house staff, and, incidentally, to advanced medical students.
3. To train for the profession, and for one's own hospital and for other hospitals, a few expert anesthetists.

The last two duties are in practice not incompatible with the first, for the reason that it is the general experience that a patient used for teaching is better studied by the teacher, and is cared for with more detail, than the less observed "case."[1]

The objections usually met are these:

1. The house staff may protest against the loss of this clinical experience. In actual practice it has been found that the fear of active protest is greatly exaggerated, the training highly appreciated, the nervous apprehension of the beginner quieted, and drudgery turned to intelligent progress, provided always that the right teacher-anesthetist has been selected.
2. The operator objects to the cost. It is all right where the fee is fair, but if a hundred-dollar laparotomy must have a ten-dollar ether fee and a ten-dollar microscopic opinion subtracted, there remains little for the surgery and nothing for the after-care.

The time is coming when the private patient will be regularly asked whether he is willing to pay for an ether giver. The bill will be rendered separately or in a separate item. Meanwhile, until the public is educated and its purse loosened, the subtraction will have to be a small one—say 5 per cent.

3. The work will be considered drudgery.

It is drudgery. So it must either be paid for or the present malpractice continue. The payment will be various—in money, in recognition, in promotion, in praise for improved results, and credit by the publication of these, and in the personal satisfaction in good work, bitterly needed and well done.

168 Clinton Street.

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[1] Brooklyn has a live society of anesthetists consisting of twenty members having active services and an average attendance of fifteen at its meetings. Anesthetists are officially on the staffs of the following hospitals [illegible] priority of their appointments: Long I[illegible] Williamsburg, Bushwick, Norwegian, Jew[illegible] Methodist Episcopal, Cumberland Street, [illegible]spect Heights.

It would seem, therefore, that the only cities in Europe or America that can claim a systematized practice of anesthesia are London and Brooklyn.

TWO CASES OF PELLAGRA

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CORSICANA, TEXAS

In view of the increasing prevalence of pellagra, I wish to make a brief report of two cases.

CASE 1.—The patient, a married woman, white, aged 30, had had no serious illness previous to the spring of 1907, when she had an eruption on the side of the neck and backs of her hands. This improved during the summer but recurred in the spring of 1908 and did not disappear as before. In November, 1908, the patient consulted me, complaining of weakness and dyspnea after exertion and of loss of memory. On Dec. 24, 1908, I saw the patient again and found a dermatitis resembling sunburn on the back of both hands and sides of the neck. In the center of this eruption was a reddish, shiny appearance of the skin, the edges having a brownish, dirty look. No other symptoms were noted except increasing loss of strength. A gastritis and enterocolitis soon followed with diarrhea and vomiting. There was lack of feeling in the stomach and bowels. The bowel movements contained blood and mucus. The bladder was completely paralyzed and there was vaginitis. These symptoms grew stedily worse until the patient's death, Jan. 5, 1909.

CASE 2.—This patient was a white woman, married, aged 30. There is nothing of special interest in the family and personal history except that the patient's diet had consisted largely of corn-bread until the last few months, when she could not eat it at all. Digestive disturbances had been present for several months, consisting of constipation, followed by pain in the abdomen and loss of appetite with diarrhea. The eruption appeared on the backs of the hands about January, 1909. The skin on the dorsal surface of both hands was red and shiny. Stomatitis was especially marked and the mucous membrane of the throat very much reddened. There was vaginitis and urethritis, and the skin around the rectum and vagina was inflamed for an inch, beyond which was a roughened scaly eruption. The patient had great pain on defecation. Physical examination of the chest revealed nothing abnormal. With the exception of anemia the blood and urine were normal. Temperature varied from subnormal to 100 F. The inflammation of the skin around the vagina and rectum became pustular, but this cleared up after using a solution of bichlorid of mercury, 1 to 2,000. The patient continued to grow weaker both physically and mentally until her death, Aug. 27, 1909.

Both patients had used a great deal of corn-bread. Further than this the histories throw no light on the etiology.

Greatness.—It is not by birth nor by pedigree but by push that the high places are reached. The men with soft raiment are usually soft all the way through. They are not built for the storms. Greatness is not born under the gambler's roof nor in the inebriate's rendezvous. The manhood of the meadows is mightier than the majesty of the mansions.—*United Presbyterian.*

A CASE OF SPLENIC LEUCEMIA

JOSEPH PLACAK, M.D.
CLEVELAND, OHIO

This case is an interesting one on account of the enormous numbers of leucocytes which were present. The ratio between the white and the red cells, the high percentage of myelocytes, and the excessive number of white cells makes this case one worthy of reporting. Several times during the course of the disease the white cells were 500,000 and over in excess of the red cells.

Patient.—S. B., aged 30, an American woman, white, housewife; family and personal history negative; had had the usual diseases of childhood; mother of two children. She complained of becoming weak, fatigue on the slightest exertion, marked dyspnea, and slight hemorrhages from the mouth. Later the patient was able to feel the enlarged spleen.

Examination.—Development good; nutrition fair; considerable anemia; puffiness of eyelids; slight edema of ankles; glands not generally enlarged; lungs and heart negative but for a hemic murmur.

Left side of the abdomen rounded and prominent. Prominence extended beyond the median line. Mass could be palpated and extended close to the symphysis pubis, smooth with rounded borders. Numerous blood examinations were made over periods of several weeks. Hemoglobin varied from 40 to 25 per cent., increasing for a time on the administration of iron and arsenic. Red cells varied from 1,250,000 to 2,250,000. The interesting feature of the case was the enormous leucocytosis which was attained (1,820,000) and which persisted for a few weeks. Differential counts showed as high as 27 per cent myelocytes.

Shortly before death the axillary, cervical and inguinal glands became enlarged. I have observed this in two other cases of supposedly purely splenic type. No autopsy was obtained.

420 Rose Building.

HEMORRHAGE FROM NIPPLES

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NEW YORK CITY

M. G., aged 26, iii-para, has enjoyed good health for many years. She had no morning sickness or other illness with present or previous pregnancies. Labor was always comparatively easy and normal. She never had trouble with her breasts.

One week before her present confinement, while massaging the breasts, she noticed some blood ooze from the left nipple. The oozing increased from day to day. There was no pain or tenderness on pressure of breasts. Seven days after she noticed the blood from the left breast she gave birth to a normal child. Oozing from the right nipple was then noticed. At this time both breasts were always wet with blood. The least pressure would increase the flow of blood considerably.

On the sixth day after the birth of the child, no change was noticed in the left breast but the right one showed a few drops of milk after some oozing of the blood. On the following day the oozing from the right breast was no more blood but milk. The left breast, however, kept on bleeding for another week before milk was seen to flow from it.

In the literature at my command I have not been able to find any similar case. Several things may be deduced from this case: 1. There need be no special alarm about bleeding from the breasts at the end of pregnancy or a week or two after the birth of the child. 2. Bleeding from this source is self-limited and does not have any ill effect on the patient. 3. It requires no medical treatment.

321 East Tenth Street.

Therapeutics

DRUGS AND THE UNITED STATES PHARMACOPEIA

While dictionaries, directories and encyclopedias must be arranged alphabetically for ready reference, alphabetical arrangement of drugs for the practicing physician is very unsatisfactory. Also, for a practicing physician, classifications based on chemical constituency, pharmacologic peculiarities, or toxic action are absolutely of no value. A drug may have a chemical, physiologic or toxic activity that if of no value from a therapeutic standpoint.

The classification always of value and always necessary for the practicing physician is one based on therapeutic uses. In other words, for utility, drugs must be classed according to the objects for which they are to be used. For instance: Drugs used to diminish secretion (astringents); drugs used to cause vomiting (emetics); drugs used to dilate the blood-vessels, etc.

Such a classification does not include drugs that may have these activities incidentally or in toxic doses, but the drugs that the physician would use to promote the object desired. Under such headings, the drugs only should be named that accomplish the object desired the most efficiently. It is positively absurd to name under such a classification a lot of useless second-, third- and fourth-rate drugs, or drugs that accomplish the object desired much less efficiently than do drugs of the first rank. It is also manifestly needless, useless and an unnecessary hardship to require medical students to acquire a knowledge of a drug that is rarely, if ever, and perhaps should never be, used in the practice of medicine. It is also just as absurd to require a student to learn a list of preparations of a drug, two-thirds of which are useless or never used, when two or three preparations of that drug, and often only one, are all that should be used therapeutically.

In other words, the United States Pharmacopeia is replete with a lot of useless drugs and preparations so that its usefulness for the practitioner is lessened.

The object of the editorials under this section on this subject is to create sufficient interest among the profession that instructed delegates to the Pharmacopeial Convention of next May, at Washington, will request the Committee on Revision to prepare the Pharmacopeia of 1910 in such form as to be of practical scientific utility.

The following classification, arranged according to therapeutic indications, is copied from Osborne's small text-book on "Materia Medica and Pharmacology."

While it could not be claimed that this enumeration of drugs comprises all that are of value, it does comprise some of the best, and any drug that aspires to a place in such a classification must show positive physiologic activity and therapeutic success to prove that it should be classed among these, the best drugs. Under each heading the drugs are named alphabetically, not because the first drug named is better than the last.

Later, in this department, the best preparations of the drugs in the most important classes will be named. Also, the drugs used for the same objects and official in the present Pharmacopeia, but of second- and third-rate values, will be enumerated and their omission from the next Pharmacopeia urged.

It is probable that, in such an enumeration of drugs of second- and third-rate value, physicians in different parts of the country will be horrified to find a pet drug or preparation condemned. Such an enumeration or condemnation does not declare that a drug is not of value as used by the individual physician, but it simply declares that there are other drugs and preparations that are better. Therefore there is no excuse for continuing a second-rate drug officially in the Pharmacopeia. This is no more radical advice than to declare that there is an improved instrument, bandage, splint or appliance that is better than one that was made and used several years ago. The individual physician or surgeon may still get perfect success out of the old apparatus, but that is no excuse for recommending it as of equal value to the new improved apparatus.

First Division

For Local Action

CLASS 1.—Drugs Used to Destroy Micro-organisms

(a) *To disinfect* (Drugs too strong to be used on the body). For buildings: Formaldehyd, Sulphurous Acid, Steam. For clothing: Formaldehyd, Heat. For dejecta: Chlorinated Lime.

(b) *To inhibit the growth of bacteria on the body or in one of its cavities* (Antiseptics). Alcohol, Cresol, Formaldehyd solution, Hydrogen Dioxid solution, Mercuric Chlorid, Phenol, Salicylic Acid.

(c) *To destroy skin-parasites* (Parasiticides). Beta-naphthol, Chrysarobin, Ichthyol, Iodin, Mercury, Pyrogallol, Resorcin, Sulphur, the above Antiseptics.

CLASS 2.—Drugs Used on the Skin

(a) *To protect* (Dressings). Acetanilid, Bismuth preparations, Boric Acid, Iodin synthetic powders, Lycopodium, Talcum, Zinc Oxid, Zinc Stearate.

(b) *To soothe* (Emollients). Almond Oil, Boroglycerid, Cacao Butter, Glycerin, Olive Oil, Petroleum Oils, Wool Fat.

(c) *To cause hyperemia* (Mild counter-irritation). Tincture of Iodin, Liniments, Mustard.

(d) *To blister.* Cantharides.

(e) *To corrode* (Escharotics). Chromic Acid, Glacial Acetic Acid, Nitric Acid, Potassium Hydrate, Salicylic Acid, Silver Nitrate, Trichloracetic Acid.

CLASS 3.—Drugs Used to Act on Mucous Membranes

(a) *To soothe* (Demulcents). Albumin water, Barley water, Flaxseed infusion, Milk, Warm Physiologic Saline solution, Slippery Elm infusion.

(b) *To diminish secretion* (Astringents). Alum, Bismuth Salts, Weak Silver solutions, Suprarenal preparations, Tannic Acid, Weak Zinc solutions.

(c) *To stimulate.* Copper Salts, Silver Salts, Zinc Salts.

CLASS 4.—Drugs Used for Local Action in the Stomach

(a) *To increase the appetite* (Stomachics). Cinchona, Gentian, Nux Vomica, Salicin, Vegetable Bitters.

(b) *To aid digestion.* Diastase, Hydrochloric Acid, Pancreatin, Pepsin.

(c) *To reduce acidity* (Antacids). Ammonia, Chalk, Lime Water, Magnesia, Sodium Bicarbonate.

(d) *To cause vomiting* (Emetics). Apomorphin (acting on the vomiting center), Copper Sulphate, Ipecac, Mustard, Zinc Sulphate.

CLASS 5.—Drugs Used for Local Action in the Intestinal Canal

(a) *To increase peristalsis* (Carminatives). Anise, Capsicum, Cardamom, Cinnamon, Peppermint.

(b) *To promote evacuation of the bowels.*

Laxatives	*Purges*	*Salines*	*Irritants*
Aloes	Calomel	Magnesium Citrate	Colocynth
Euonymus	Castor Oil		Croton Oil
Magnesia	Comp. Cathartic Pill	Magnesium Sulphate	Elaterium
Podophyllum	Large dose of any laxative	Potas. and Sod. Tartrate	Jalap.
Rhamnus Pursh.		Seidlitz Powder	
Rhubarb		Sodium Phosphate.	
Senna		Sodium Sulphate.	
Sulphur			

(c) *To correct fermentation.* Beta-naphthol, Thymol, Salicylic Acid, Phenyl Salycilate (Salol).

(d) *To remove Parasites* (Anthelmintics). Aspidium, Beta-naphthol, Pepo, Quassia, Spigelia, Thymol.

Second Division

For Systemic Action

CLASS 1.—Drugs Used to Act on the Skin After Absorption

(a) *To stimulate.* Arsenic, Thyroid.

(b) *To decrease perspiration.* Atropin, Sulphuric Acid.

(c) *To increase perspiration* (Diaphoretics). Alcohol, Antipyrin, Pilocarpin.

CLASS 2.—Drugs Used to Act on the Genitourinary System

(a) *To increase the amount of urine.* Buchu, Caffein, Digitalis, Scoparius, Squill, Water.

(b) *To modify the character of the urine.* Hexamethylenamin, Methylene Blue, Potassium Acetate, Potassium Bicarbonate, Potassium Citrate, Salicylic Acid, Salol.

(c) *To stimulate the mucous membranes.* Cantharides, Copaiba, Cubebs, Oil of Santal.

(d) *To increase menstruation* (Emmenagogues). Iron, Manganese Dioxid, Thyroid.

(e) *To contract the uterus* (Oxytocics). Ergot, Hydrastis, Quinin, Viburnum.

CLASS 3.—Drugs Used to Act on the Respiratory Tract

(a) *To increase the secretion of mucous membranes.* (Expectorants). Ammonium Chlorid (small doses), Ipecacuanha, Iodids.

(b) *To decrease the secretion of the mucous membranes.* Ammonium Chlorid (large doses), Atropin, Codein, Heroin, Morphin, Terpin Hydrate.

(c) *To relax spasm.* Atropin, Bromids, Chloral, Gelsemium, Morphin, Nitroglycerin, Stramonium, Tobacco.

CLASS 4.—Drugs Used to Act on the Circulation

(a) *To stimulate the heart.* Alcohol, Ammonia, Camphor.

(b) *To depress the heart.* Aconite, Veratrum.

(c) *To strengthen the heart.* Caffein, Digitalis, Strophanthus, Strychnin.

(d) *To contract the blood-vessels.* Atropin, Ergot, Suprarenal.

(e) *To dilate the blood-vessels.* Nitrites.

CLASS 5.—Drugs Used to Act on the Nervous System

(a) *To stimulate* (Cerebral Stimulants, Antispasmodics, Excitomotors). Asafetida, Caffein, Camphor, Cannabis Indica, Phosphorus, Strychnin, Thyroid, Valerian.

(b) *To depress* (Analgesics; Depresso-motors). Acetanilid, Aconite, Antipyrin, Belladonna, Bromids, Chloral, Lobelia, Opium, Phenacetin.

(c) *To produce sleep* (Hypnotics). Bromids, Chloral, Hyoscine, Paraldehyd, Sulphonal, Trional, Veronal.

(e) *To produce anesthesia.* General: Chloroform, Ether, Nitrous Oxid. Local: Cocain, Ethyl Chlorid, Ice, Menthol, Phenol.

CLASS 6.—Drugs Used to Lower the Temperature of the Body

(Antipyretics). Acetanilid, Antipyrin, Cold, Phenacetin.

CLASS 7.—Drugs Used for Actions Which are Specific

Antitoxin in Diphtheria.
Cinchona in Malaria.
Colchicum in Acute Gout.
Iodids in some disturbances of Metabolism, notably Sclerosis (in small doses long continued).
Iron in Anemia.
Mercury in Syphilis.
Salicylic Acid in Acute Arthritis.
Thyroid in Myxedema.

CLASS 8.—Unclassified Organic Extracts

Mammary.
Ovarian.
Pancreas.
Parotid.
Pituitary.
Testicular.
Thymus.

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[*For other information see second page following reading matter*]

SATURDAY, DECEMBER 11, 1909

OPTIC NEURITIS AND TUMORS OF THE BRAIN

Ophthalmoscopy has become a routine procedure in neurologic examinations, and the information thus gathered has been of inestimable service in the diagnosis and therapeutics of nervous diseases in general. In the solution of the special problem of tumors of the brain, however, ophthalmoscopic examination has been less serviceable; while it has indicated the presence, it has done little to establish the localization or the type of such neoplasms.

If ophthalmoscopy was to furnish this much-desired information, thorough, comprehensive study was necessary of the ophthalmoscopic pictures and their relation to the character, location, and size of the new growth within the cranial vault; and fortunately such study has been made. In a comparatively recent paper[1] Leslie Paton has presented a most thorough and interesting analysis of about four hundred cases of brain tumor from the records of the National Hospital for Paralyzed and Epileptic in London. A feature which gives special value to this study is that all of the brains were examined either post-mortem or in the living body in the course of surgical procedures which permitted adequate observation.

Passing over many technical points, which cannot be adequately reviewed here, three groups of facts are worthy of comment: that is, those dealing with the incidence and severity of the optic neuritis, with the location of the tumor, and with the eye changes—points of paramount importance to the ophthalmologist, neurologist, and psychiatrist.

Paton is far from dogmatic in his assertions, but regarding incidence of the optic neuritis he reaches the following conclusions:

1. When a tumor, directly or indirectly, exercises constant pressure on the chiasm or on the optic nerves, it is likely to cause a primary atrophy without any preceding edema of the disc.

2. The absence of optic atrophy is not infrequently indicative of meningeal tumors without involvement of the brain substance.

3. There are two regions of the brain, the pons Varolii and the white matter of the cerebral hemispheres, in which tumors frequently develop without causing optic neuritis.

Concerning the severity of the neuritis, the amount of retinal swelling, as measured by the height, the turgescence, and capillary congestion, offers a fairly reliable guide; so do hemorrhages and dusky, yellowish patches of exudate. An equally important element in the picture is the extent to which the neighboring retina is affected by the spreading of the edema from the neighborhood of the disc. In certain very severe cases a macular fan shows a spreading edema. This is evidence of a neuritis of gross character, and never appears with the lower degree of swelling. Loss of sight is a very unsatisfactory indication of the severity of the neuritis.

Some of the most interesting facts that may be gathered from this extensive paper concern location, and the conclusions drawn therefrom furnish almost the only general guides in this difficult field. Precentral tumors, Paton says, are nearly always associated with a fairly severe neuritis, whereas postcentral tumors are nearly always associated with a neuritis which is as a rule moderate and often of very short duration.

A neuritis of severe grade is found, moreover, with tumors of the optic thalamus and midbrain, while cerebellar and extracerebellar tumors of the posterior fossa cause a neuritis of a grave character, but apparently less severe than the preceding.

Temporosphenoidal tumors are almost invariably associated with a neuritis as grave as precentral or frontal tumors, while subcortical tumors develop a neuritis in only about 50 per cent. of the cases and this, when present, is as a rule mild and, with parietal tumors particularly, of short duration.

In practically one-half of the cases a difference in severity of the neuritis in the two eyes may be noted, sometimes being greater on the side of the tumor, at other times on the opposite side. This difference, then, is an untrustworthy sign and should be disregarded. The pathologic nature of the tumor does not in itself play any part in determining the onset of the neuritis, except in so far as the nature of the tumor determines its location. The age of the patient in itself bears little or no relation to the occurrence of neuritis.

This contribution of Leslie Paton's will undoubtedly give some assistance in the difficult task of the localization of cerebral neoplasms and should serve to emphasize the desirability of more searching ophthalmoscopic examinations on the part of both nerve and eye specialists.

THE EPIDEMIOLOGY OF TYPHOID FEVER

It is but little more than half a century since typhoid fever became first recognized as a disease different from other "slow" or "continued" fevers or even distinct from typhus fever. And yet in few other diseases has greater progress been made toward definite conceptions of cause, mode of spread and manner of prevention.

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[1] Paton, Leslie: Brain, 1909, xxxii, No. 125.

The realization of the part played by contaminated drinking-water came very early in the study of modes of dissemination of this infection. It is natural that this should have been the case in view of the explosive character and frequent striking localization of water-borne outbreaks. Epidemics like those at Plymouth, Ithaca and Butler in this country tend to focus attention on drinking-water as a primary source of infection. The practice of distributing to the inhabitants of cities raw drinking-water mixed with sewage is, however, steadily receding. It is not necessary to recapitulate here the various procedures by which improvement of public water-supplies has been brought about. Although much still remains to be done, especially in the United States, it cannot be questioned that the reduction in the amount of water-borne typhoid in the last twenty-five years in all civilized communities has been enormous.

As often happens in infectious diseases, the steady diminution of typhoid cases due to one cause has brought into prominence other factors previously unnoticed or regarded as of little significance. Sanitary authorities everywhere have found that the complete eradication of typhoid fever, a typical "preventable" disease, is one of the most difficult of public health problems. It has happened more than once that after a community has obtained a pure and uncontaminated water-supply the typhoid mortality has remained excessively high. The experience of the city of Washington, D. C., affords a well-known illustration of the subordinate rôle that may be played by drinking-water in causing typhoid in a great city. The typhoid fever that still occurs in a community after the public water-supply has been effectively purified has sometimes been designated as "residual" typhoid, but the term seems to be an unfortunate one so far as it implies that the major source of infection has been removed by the elimination of infected water. For it must be admitted that in a great many communities, in this country and in Europe, drinking-water is at the present time a subordinate factor in the causation of typhoid fever. It seems necessary to emphasize this fact, since exaggerated statements have sometimes found utterance; such, for example, as the view expressed by a well-known sanitary engineer to the effect that the universal purification of water-supplies would do away altogether with typhoid fever, or the popular saying, apparently based on the assumption of official negligence in the matter of water-supply supervision, that "for every case of typhoid fever some one should be shot." Naive expressions of this sort can do only harm. It would be well if the general public realized more keenly some of the difficulties in the way of the complete suppression of typhoid fever.

These difficulties have been made apparent to some extent by the investigations of typhoid fever in Washington, published by Rosenau and his associates, and they are again brought to light in Kayser's study of this disease in Strasburg.[1]

From Kayser's observations, which extend over more than three years, it appears that raw milk is credited with causing in all probability 26.7 per cent. of the cases, while only 14.6 per cent. could be traced to water infection (including infection while bathing). Contact with typhoid patients—mostly atypical cases—was apparently responsible for 16.8 per cent. of the cases, while as many as 9.5 per cent. were found to be due to the agency of typhoid carriers! Other less important sources of infection were discovered, such as the consumption of infected food substances and contact with infected clothing or with the contents of privy vaults. In about 13 per cent. of the cases, the disease seemed to have been contracted outside the city. In all, about 87 per cent. of the typhoid cases in Strasburg could be traced to a plausible origin. Kayser seems inclined to attribute the 13 per cent. of unknown origin in large part to the agency of unrecognized typhoid carriers; and certainly the facts in the body of his paper countenance this view. It may be noted that this experienced investigator apparently does not attach so much importance to insect carriers as do many recent American writers.

Among the noteworthy points brought out in the Strasburg investigation is the existence of "typhoid streets" or localized areas in which the disease is disproportionately prevalent. A remarkable liability on the part of certain occupations is likewise observed. Not only is the mortality among professional nurses very high, but the number of cases occurring in persons having to do with the handling and preparation of food substances is amazingly great. Bakers, cooks and milk dealers all have a much higher mortality (1.1 per cent.) in proportion to the numerical strength of their respective occupations than agricultural workers (0.12 per cent.) or employees in paper or textile factories (0.0 per cent.). As Kayser says, in Strasburg typhoid fever can almost be considered as an occupational disease.

Kayser's investigations do not tend to minimize the importance of the bacillus-carrier as an agency in spreading typhoid. Of the twenty-eight known carriers in Strasburg, eleven were definitely implicated in the causation of new cases and nine of the others were with less certainty under suspicion of having disseminated the infection. The difficulties in the way of placing restraint on the occupational freedom of known typhoid carriers are strongly set forth in Kayser's paper. There can be no doubt that control of the sources of infection in typhoid fever offers a serious problem to the public health administration.

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[1] Kayser, Heinrich: Die Art der Typhusausbreitung in einer Stadt (nach Strassburger Beobachtungen). München. med. Wchnschr., May 25 and June 1, 1909, lvi, 1066-1130; abstr. in THE JOURNAL A. M. A., July 17, p. 244.

TRAMMELING THE SANITARY DEPARTMENT OF THE CANAL ZONE.

The work of the Department of Sanitation in the construction of the Isthmian Canal has been closely observed by sanitarians all over the civilized world. In fighting disease, much depends on the accuracy of the information and the promptness with which it is received. Frequent communications between boards of health are as necessary as weather bulletins. The progress of an epidemic, the discovery of new methods of overcoming disease, if transmitted at once to other health officers, may mean the saving of thousands of lives. Frequently issued and widely distributed sanitary bulletins are of the greatest value. Most of the states and a large number of cities issue monthly health reports. The United States government maintains in Manila a sanitary department for the control of diseases in the Philippine Islands which publishes health reports regularly. The United States Public Health and Marine-Hospital Service also publishes weekly reports. All of this matter is carefully scanned by modern health officers and thus the knowledge and experience of one is of assistance to all.

One of the most important things done by Colonel Gorgas, chief sanitary officer of the Canal Zone, was the monthly publication and distribution of the Report of the Department of Sanitation of the Isthmian Canal Commission, which was eagerly looked for and carefully read by all officers of health, not only for information regarding the suppression of disease in the Canal Zone, but also for valuable data on general sanitation and the control of diseases, especially in the tropics. This monthly pamphlet was regarded by sanitarians everywhere as of the greatest value and among the most important of the publications on tropical diseases. It was also of great value to the Department of Sanitation itself, for it brought to it, through exchange, similar publications from other workers, at home and abroad.

It was, therefore, with surprise and regret that sanitarians learned that in March, 1909, the publication of these reports was discontinued by order of Lieutenant-Colonel George W. Goethals, the army engineer officer in charge of the construction of the canal, who evidently did not know that the results obtained by the Department of Sanitation were of interest either to the public or to the medical profession.

In reply to a letter sent from The Journal, asking why the reports were no longer sent out, the Isthmian Canal Commission stated that the printing of these reports had been discontinued, but that "brief synopses of the reports of the Department of Sanitation have appeared in the monthly reports of the chairman of the commission, which have been published regularly in the *Canal Record.*" Examination of seven consecutive numbers of the *Record,* running from June 30 to Aug. 11, 1909, shows that many pages have been devoted to reports from the engineering and construction departments and that much space has been taken up by the monthly record of the performance of steam shovels, building construction, record of excavation, tables showing the height of the tide, amount of rainfall, the exact height of the Chagres River, the rebuilding of the Panama Railroad, the classification of accounts, the awards of contracts, wage classification of employees, and even the social doings on the Isthmus, including clubs, lectures, dances, bowling and indoor baseball, but that less than one column in the seven numbers has been devoted to the work of the Department of Sanitation. Yet even in this small space the surprising record made by the department is evident, since the report shows that the death-rate in the Canal Zone has been reduced from 50.57 per thousand in June, 1905, to 16.42 per thousand in June, 1909, and that, although there were 97 deaths in June, 1906, when the employees numbered only 28,010, there were in June, 1909, only 37 deaths, 60 less than in June, 1906, although the number of employees had increased to 47,493. And yet the Canal Commission considers these facts, showing one of the most brilliant sanitary records ever made, of no interest to the public and of little or no importance to sanitarians.

The work done by Colonel Gorgas in the Canal Zone has been a most striking object-lesson to the people of the United States as to the ability of modern sanitary methods to control disease. It has also had a valuable educational effect on the American public. It is highly probable that if the Department of Sanitation had not made the showing which it has in the suppression of disease, and if it had not sent its reports broadcast, the Canal Commission would now have great difficulty in securing employees. The influence of these monthly reports on health conditions in neighboring Central American states is by no means to be underestimated. Yet their publication and distribution are forbidden on the grounds of economy, when their actual cost to the government is less than $200 a month. What would be thought of a chief sanitary officer if he assumed to veto the plans of the directing engineer for bridges, tunnels, and grades in the railroad work in the Canal Zone? How much importance would the American public attach to the opinions of a medical officer on the strength or position of dams and locks or the construction of steam shovels used in canal construction? Yet this is no more ridiculous than for an engineering officer to attempt to dictate to the Department of Sanitation as to technical details in sanitary matters. The work done by the Department of Sanitation is of vital importance to the completion of the canal, and the American people, when they fully understand the situation, will not only demand that the chief sanitary officer of the Isthmus be allowed to continue his work untrammeled, but that the widest publicity be given to the results obtained in his department in order that all diseases, and especially those peculiar to the tropics, may be further controlled and, if possible, eliminated.

THE VINDICATION OF GALL

Most physicians know the name of Gall because they have heard of the columns of Gall and Burdach in the spinal cord; but few realize that the Dr. Gall who is thus commemorated is the father of so-called phrenology—that is, the attempt to determine intellectual capacity and mental characteristics from the appearance of the skull—and also the pioneer discoverer of the physiology of the brain. Dr. Bernard Hollander, who is president of the Ethnological Society and physician to the British Hospital for Mental Disorders, has spent many years in vindicating the reputation of this great anatomist of the brain from undeserved aspersions and from exaggerated pretensions made by disciples.[1] Gall's career illustrates the penalties of being before one's time in knowledge. It is dangerous to discover, before men's minds are prepared for the truth, the circulation of the blood, or that the heart is a muscle, or that the earth moves, because, as Harvey and Steno and Galileo realized to their cost, men do not like to have their cherished beliefs turned to foolishness.

At the end of the eighteenth and the beginning of the nineteenth century four men in Paris startled the scientific world, gained a momentary celebrity, and then lapsed into oblivion. They were Cagliostro, Lavater, Mesmer and Gall. A good idea of Cagliostro's character may be obtained from Dumas' "Memoirs of a Physician." Lavater did good work in physiognomy, as any one who goes back to his books will readily appreciate, but he utterly exaggerated the significance of his observations. What Mesmer exploited under the name of "animal magnetism" has been used by quacks ever since, under one name or another; but it must not be forgotten that what he did forms an important chapter in the history of psychotherapy. Cagliostro, Lavater and Mesmer had more of the charlatan than of the scientist in them. The fourth, Francis Joseph Gall, undoubtedly made the best investigations on the brain that had been made up to his time, but because what he discovered was contrary to popular belief his work came to be ranked with that of the charlatans.

Now comes the vindication of Gall. Several discoveries in the anatomy of the nerves undoubtedly belong to him. He was the first to show that the gray matter precedes the white in origin and in importance; he traced the origin of the nerve bundles from the gray matter and taught that the gray substance nourished the white fibers. He traced the origins of the olfactory, the oculomotor, the trigeminal and the abducens nerves. He established the certainty of the decussation of the pyramids, when such men as Bichât, Magendie, Morgagni and Prochaska were opposed to it. Above all, he was the first to describe the formation and development of the brain in the fetus and to call attention to the simplicity of the convolutions in new-born infants and in idiots, as compared with the complexity of the brain of the normal adult. Many of these discoveries are usually referred to other anatomists. A typical example of a wrong done to Gall is the naming of the island of Reil, which Gall had described long before, after another anatomist of his time, who had been present at some of Gall's demonstrations. These discoveries of Gall are now generally acknowledged.

The reason Gall did not receive recognition during his lifetime apparently was that Napoleon in some way acquired a prejudice against him; hence it became fashionable to disparage Gall. Before this some of his contemporaries had been most enthusiastic in their praise of his work. Flourens, whose own observations on the brain made at this time are of so much value, declared: "I shall never forget the impression I received the first time I saw Gall dissect a brain. It seemed to me as if I had never seen this organ." Geoffroy St. Hilaire, the famous French naturalist, who tried, before Napoleon's displeasure was known, to obtain Gall's election to the French Academy, wrote: "I shall always remember our astonishment, our sensations, our enthusiasm, on seeing Gall for the first time demonstrate his anatomic discoveries. The word 'brain' will always call up to mind the name of Gall." For many years Gall lived in obscurity. Toward the end of his life some slight honor for all his work came to him. His monument in Père Lachaise, where he lies buried, has recently been renovated; and now it would seem that at last his merits are to receive the appreciation that they so richly deserve.

THE PRESIDENT'S MESSAGE AND THE PROPOSED NATIONAL BUREAU OF HEALTH

The movement originally instigated and long fostered by the medical profession for more comprehensive national health service has received a distinct impetus from President Taft in his message laid before Congress on Tuesday of this week. The part of his message relating to this subject is as follows:

"For a very considerable period a movement has been gathering strength, especially among the members of the medical profession, in favor of a concentration of the instruments of the national government which have to do with the promotion of public health. In the nature of things, the Medical Department of the Army and the Medical Department of the Navy must be kept separate. But there seems to be no reason why all the other bureaus and offices in the general government which have to do with the public health or subjects akin thereto should not be united in a bureau to be called the 'Bureau of Public Health.' This would necessitate the transfer of the Public Health and Marine-Hospital Service to such a bureau. I am aware that there is a wide field in respect to the public health committed to the States in which the Federal Government cannot exercise jurisdiction, but we have seen in the Department of Agriculture the expansion into widest usefulness of a department giving attention to agriculture when the subject is plainly one over which the states properly exercise direct jurisdiction. The opportunities offered for useful research and the spread of useful information in regard to the cultivation of the soil and the breeding of stock and the solution of many of the intricate problems in progressive agriculture have demonstrated the wisdom of establishing that department. Similar reasons, of equal force, can be given for the establishment of a bureau of health that shall not only exercise the police jurisdiction of the Federal Government respecting quarantine, but which shall also afford opportunity for investigation and research by competent experts into questions of health affecting the whole country or important sections thereof; questions which, in the absence of federal governmental work, are not likely to be promptly solved."

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[1] Hollander, Bernard: The Unknown Life and Works of Dr. Francis Joseph Gall. An Inaugural Address delivered before the Gall Society on May 15, 1909. Paper. Pp. 31. Price, one shilling. Published for the Gall Society by Siegle, Hill & Co., 2, Langham Place, London, W.

This subject has been discussed by President Taft from the viewpoint of both the jurist and the practical statesman. Addressing himself primarily to the constitutional question involved, he has anticipated the argument that has perennially been brought forward by the enemies of every measure that contemplated the control by the national government of interests susceptible of concurrent control by the states. This argument was urged long and successfully against the organization of both the Department of Agriculture and the Department of Commerce and Labor, but in both instances a broader and wiser interpretation of the Constitution prevailed. No cry of "special legislation" can be raised against a national public health bureau, since no class or social group will be the special beneficiary of such a step. This was recognized a few years ago, when, in the presence of an invasion of yellow fever, the governors of the southern states, in formal conference, yielded certain prerogatives in sanitation to the Federal Government. This action, from those who had jealously guarded the rights of their states, was a forceful recognition of the fact that sanitary regulation for the general welfare ought to be a function of the general government. If a constitutional way can be found for the federal control of yellow fever, why may it not be found for the federal control of tuberculosis, cancer and typhoid? It would seem that the President is disposed to go as far in this direction as his acute and professional intimacy with the Constitution will permit.

The recommendation of President Taft may be a disappointment to those who feel that our national health interests require a separate department with a secretary. It is, however, one thing to wish for a thing and quite another to get it, either for the President or the people, since both must recognize that an evolutionary process has been established through which administrative agencies must pass. A bureau of agriculture, for instance, with a commissioner in charge, was established in 1862, but did not become a department until 1889. A bureau of labor and other bureaus, each in charge of a commissioner, preceded the organization of a Department of Commerce and Labor. If President Taft's policy can be carried out and if the health service can be placed on a basis of uniformity of organization with other services of the government, we may confidently look forward to its speedy development in prestige, power and usefulness.

THE VIABILITY OF THE TUBERCLE BACILLUS

There has been a good deal of discussion and considerable diversity of opinion as to the length of time the tubercle bacillus may survive extrusion from the animal body. The matter is of no little importance, as on a decision of the question must depend the application of certain measures of prevention. At first it was believed that the tubercle bacillus contained spores and that it was correspondingly resistant to various destructive influences. It was eventually found, however, that the apparent spores were due to beading of the organism in consequence of changes in the protective waxy covering by which its body is surrounded. Recent investigation, moreover, seems to show that the tubercle bacillus has no greater resistance to such agencies as heat, drying, chemicals, sunlight, than most other non-spore-bearing bacteria. Rosenau[1] has shown that exposure to a temperature of sixty degrees Centigrade for twenty minutes is sufficient to destroy tubercle bacilli in milk, bouillon, water and other fluids. In sputum, in dust, in water and on fabrics, on the other hand, the organism may survive for months, although probably the larger number soon die. In pure culture, however, the tubercle bacillus lives for only a comparatively short time, even under the most favorable conditions; and it is generally agreed that the organism succumbs within a few hours to the action of direct sunlight.

As a result of his own observations and of a comparison of his work with that of others Rosenau[2] arrives at the conclusion that there is no easy method of determining the death of the tubercle bacillus. The virulence of the micro-organism vanishes before death takes place. The latter can be determined only by animal experimentation. Dead tubercle bacilli cause lesions indistinguishable from those due to living bacilli, and many erroneous conclusions have been reached from lack of appreciation of this fact.

THE RED CROSS CHRISTMAS STAMP

The sale of Red Cross Christmas stamps, which was so successful last year and is being repeated this year, has several admirable features. Of course, the humanitarian purpose of the enterprise—the raising of funds with which to carry on the campaign against tuberculosis—cannot fail to receive the hearty approval of physicians and laymen alike. These stamps, moreover, which invite the pennies of children and the nickels and dimes of persons with limited means, must create an interest in the work which only a sense of cooperation can give. No imposing subscription list, headed by the names of millionaires, could enlist the active sympathy of the people as can this opportunity for the youngest and the poorest to make their modest offering, secure that it will not be despised. The wide-spread use of the attractive little stamp[1] with its Christmas message must in itself be an educating influence in the antituberculosis crusade. The work deserves the cordial support of all, and physicians especially must desire its success.

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[1] Rosenau: Bull. 42, Hyg. Lab., U. S. P. H. and M.-H. S., 1908.
[2] Rosenau: Bull. 57, Hyg. Lab., U. S. P. H. and M.-H. S., 1909.

Medical News

ARKANSAS

New Board of Health.—Drs. Edward P. McGehee, Lake Village, J. T. Blanks, Dermott, and James W. Nicholls, Readland, have been appointed members of the board of health of Chicot county.

Damage Suit Dismissed.—The suit of Dr. Thomas B. Rider, Hot Springs, for $20,000 damages against Dr. Gilbert C. Greenway and other physicians prominent in the Visitors' Protective League, is said to have been decided against the plaintiff, November 20.

Sanatorium to be Built.—The Arkansas Tuberculosis Commission has made arrangements to proceed with the erection of a state tuberculosis sanatorium, which is to cost $50,000. The site, which was donated to the board, is three miles from Booneville and contains a thousand acres.

Elections.—The Third District Medical Society held its annual meeting in Lonoke recently and elected Dr. Henry Rightor, Helena, president; Dr. Thomas J. Stout, Brinkley, secretary, and Dr. Eugene A. Callahan, Carlisle, treasurer.——The physicians of Polk county met at Russellville, November 4, and organized the Polk County Medical Association, electing Dr. Robert M. Drummond, Russellville, president, and Dr. Roy W. Darr, Atkins, secretary-treasurer.

ALABAMA

Asks Physician to Collect Data.—Dr. W. H. Sanders, Montgomery, state health officer, has issued a circular letter to the physicians of the state, urging them to do their full duty in the collection of data of diseases and reports of same. He lays especial stress on the prevalence of pellagra and asks that careful statistics be collected.

New Society Formed.—The Birmingham Surgical and Gynecological Society has been organized with thirteen charter members, and has elected the following officers: President, Dr. Benjamin G. Copeland; vice-president, Dr. Gaston Torrance; secretary-treasurer, Dr. Edward P. Solomon, and executive council, Drs. John D. S. Davis, William M. Jordan, and Lewis C. Morris.

Mobile Physicians Protest.—Fifty physicians of Mobile city and county have signed a petition protesting against the unwarranted restrictions imposed by the prohibition laws of the state and further protesting against such restrictions by the passing of the proposed constitutional amendment. The law referred to prohibits the sale of alcoholic spirits on physician's prescription or otherwise. All hospitals and infirmaries are prohibited from using alcoholic stimulants.

CALIFORNIA

Gives Ambulance to Hospital.—A Studebaker hospital ambulance, fully equipped, has been presented to the San Mateo Red Cross Hospital by Mrs. M. J. O'Connor.

Warning.—The readers of THE JOURNAL are warned against a person calling himself "Dr. A. Cato," and pretending to sell goods from the Victor Electric Co., of Chicago, on commission. His method of procedure is said to be to sell a bill of goods, get part payment in cash, and then not to deliver the goods.

September Births and Deaths.—During September, there were reported 2,710 births, equivalent to an annual birth rate of 16.2 per cent. per 1,000. During the month 2,353 deaths were reported, equivalent to an annual death rate of 14 per 1,000. Of these 370, or 15.7 per cent., were due to diseases of the circulatory system and 327, or 13.9 per cent., to tuberculosis of various forms.

Sanatoria.—The managers of the Colfax School for Tuberculosis have enlarged their facilities by the purchase of the Tokayano Ranch of sixty-five acres near the town and will proceed at once to erect twenty cottages, and more as required. Dr. Robert A. Peers is medical superintendent of the institution.——Dr. George H. Juilly, San Francisco, is equipping a building in San Mateo for a sanitarium.

Tropical Diseases and Parasitology.—A course of lectures in tropical medicine and medical parasitology will be given in the Oakland College of Medicine, beginning January 3, and lasting for twelve weeks, under the direction of Dr. Creighton Wellman. Two lectures and laboratory demonstrations will be given each week, and interesting tropical cases at the school and various hospitals will be exhibited and studied.

Physicians Injured.—Dr. M. S. da Silva, Sacramento, was seriously injured November 18, when a street car crushed his buggy against a pile of lumber, throwing him out and causing severe contusions.——Dr. Charles S. Taylor, Los Angeles, was seriously injured in San Francisco, October 23. He was standing on a street car when a buggy collided with the car and one of the shafts was forced into the doctor's right thigh for three inches.

Personal.—Dr. Raymond Russ, Sacramento, has been appointed medical inspector of the state board of health.——Dr. Wallace I. Terry, San Francisco, retiring chief surgeon of the Emergency Hospital, was given a banquet by the assistant surgeons of the staff, October 29, over which Dr. Charles B. Pinkham, the new chief surgeon, presided as toastmaster.——Dr. Stewart McL. Doherty, first assistant physician at the Napa State Hospital, is said to have been dismissed by the board of managers, November 18.——Dr. Robert A. Peers, Colfax, has retired from general practice and will devote himself entirely to the care of tuberculosis. Dr. Henry T. Rooney, San Francisco, will take charge of the general work at Colfax.——Dr. John U. Force has been appointed health officer at Berkeley, vice Dr. Julian J. Benton.——Dr. Martin H. Fischer, professor of pathology in the Oakland College of Medicine, has been awarded the Nathan Lewis Hatfield prize of $500 for original research work in medicine.——Dr. Lionel S. Schmitt, San Francisco, has resigned from the U. S. P. H. and M.-H. Service, and will resume private practice. The attaches of the health department, on October 30, presented Dr. Schmitt with a silver and bronze desk set.

Hospital Interests.—The cornerstone of the new San Francisco County Hospital was laid November 20, under the auspices of the board of health, Dr. William Ophuls, president of the board of health, acting as chairman. The buildings are to cost $2,000,000, and will include a general hospital, an isolation hospital, a tuberculosis hospital, and all necessary buildings for power plant, laundry, morgue, ambulance sheds, and stables.——Plans for a new three-story fireproof hospital for Alameda county have been formulated by a committee consisting of Drs. Daniel Crosby, Fruitvale; Oliver D. Hamlin, Oakland; and William A. Clark, San Leandro.——The old wing of the recently rebuilt St. Luke's Hospital, San Francisco, was destroyed by fire November 18. Twenty patients were removed from the hospital without casualty. Plans have been prepared by the directors of the hospital for the restoration of the institution to its original scope and efficiency.——San Jose is soon to have two new hospitals. A contract has been awarded for the erection of the Contagious Disease Hospital, near the O'Connor Hospital, to cost $9,000, and the Bird Haven Company has let the contract for the erection of a sanitarium for nervous diseases, to cost $5,000.——The Northern California Hospital, Eureka, has recently been completed at an expense of more than $80,000, and is now open and in charge of Drs. Charles C. and Curtis O. Falk.——The contract for the erection of the new St. Francis Hospital, San Francisco, has been awarded for $154,500 for the structural work alone. The new building will cover a space 103x137½ feet, is to be five stories and basement in height, and of steel and reenforced concrete construction.——Fabiola Hospital, Oakland, was benefited to the extent of more than $3,000 by the benefit performance November 2.——The Peninsula Hospital, Palo Alto, will be opened this month. The exterior of the building is completed and as soon as the equipment is received, the institution will be ready to open.

COLORADO

Library Transferred.—The medical library of the Denver Academy of Medicine has been transferred to the Medical Society of the City and County of Denver.

Personal.—Dr. Albert L. Bennett, Denver, has been appointed local consul for Japan.——Dr. Henry S. Denison, Denver, has been appointed editor of *Colorado Medicine.*——Dr. Donald

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[1] Described in THE JOURNAL A. M. A., Oct. 30, 1909, liii, 1495.

Gregg, Colorado Springs, has been appointed resident physician of the new government hospital, Manila, P. I.——Dr. George W. Morse, first assistant physician of the Modern Woodmen Sanatorium, Colorado Springs, has resigned and will return to Denver.

The Tuberculosis Fight.—A society woman of Colorado Springs has placed $10,000 in trust, the income of which is to be used in caring for poor patients suffering from tuberculosis. Dr. Charles F. Gardiner has been made almoner of the fund. A second fund of $10,000 has also been placed in trust for the benefit of destitute sufferers from tuberculosis.——About $3,000 of the $10,000 required to build the Associated Charities Sanatorium in Colorado Springs has been pledged.

CONNECTICUT

Sanatorium Site Purchased.—At a meeting of the State Tuberculosis Commission, November 23, a tract of about thirty acres of land on Cedar Mountain, near Hartford, was decided on for the Hartford county sanatorium.

Physicians Offer Services.—The physicians of Manchester have signed an agreement providing for free service to dependent poor of the town, "when deemed proper," and approving of the appointment of a town physician.

Epileptic Colony.—At the last session of the legislature, a bill was passed providing for the establishment of a colony for epileptics, for an appropriation of $25,000 for the purchase of a site, and for the appointment of a commission to select and purchase such site. Drs. William L. Higgins, South Coventry, and Max Mailhouse, New Haven, have been appointed by the governor a committee.

Mental Hygienists Meet.—At the second annual meeting of the Connecticut Society for Mental Hygiene, held in New Haven, November 12, Drs. Seldon B. Overlock, Pomfret, and Frederick T. Simpson, Hartford, were reelected to fill vacancies in the board of directors, and W. Perry Curtiss was elected to fill the vacancy caused by the resignation of Dr. Elizabeth C. Spencer, Waterbury.

Monument to Inebriety-Cure Pioneer.—A monument was unveiled in the Wilton Cemetery, October 27, to Dr. J. Edward Turner, the first to urge the practical fact that inebriety is a disease, and who founded and built the first institution for the treatment of this disease. Dr. Lewis D. Mason, Brooklyn, N. Y., president of the American Society for the Study of Alcohol and Narcotics, delivered the dedicatory address, and the memorial address was made by Dr. Thomas D. Crothers, Hartford.

Dispensary Election.—At the annual meeting of the board of managers of the New Haven Dispensary Association, November 10, the following officers were elected: Dr. Arthur N. Alling, secretary; medical staff: surgery, Dr. Joseph M. Flint; medicine, Drs. George Blumer and Oliver T. Osborne; gynecology, Dr. Otto G. Ramsay; ophthalmology, Dr. Arthur N. Alling; neurology, Dr. Max Mailhouse; pediatrics, Dr. Harry M. Steele; dermatology, Dr. Ralph A. McDonnell; orthopedics, Dr. Frederick N. Sperry; and laryngology, Dr. Ernest H. Arnold.

ILLINOIS

Spitting Ordinance in Effect.—The municipal ordinance against spitting came into effect in Kankakee, November 26. By its provisions, a fine of $3 and costs is provided for the first offense, and a maximum fine of $23.25.

Tent Colony Disbanded.—The Tuberculosis Tent Colony at Peoria Heights has been disbanded and the patients have been discharged and have gone to their respective homes. During its existence the colony has had eight patients, all of whom showed marked improvement. It is proposed to reestablish the colony next year on a larger scale with accommodation for twenty or more patients.

Hospital News.—The campaign in Monmouth for a new hospital was inaugurated November 29. It is expected that $30,000 will be raised for the erection of the new building, and half of that amount has already been secured.——The people of Rochelle have subscribed $22,000 of the $35,000 required to make effective the offer from Emmanuel Hilb, the $15,000 for the establishment of a public hospital in Rochelle.

Retiring Railway Surgeon Honored.—Dr. Charles B. Fry, Mattoon, for many years local surgeon of the Illinois Central and Big Four railroads, who is soon to retire from practice and leave the city, was the guest of honor at a meeting of the railway employees of the city, held November 30. The superintendent of the St. Louis division of the Big Four presented Dr. Fry, on behalf of the employees, with a handsome traveling bag.

Chicago

Tuberculosis Clinic Changes Habitat.—The clinic of the Chicago Tuberculosis Institute, now held twice a week at the Northwestern University Medical School, was transferred December 6 to the Post-Graduate Hospital, Dearborn and Twenty-fourth streets. The clinic days and hours will remain the same, Mondays and Thursdays, from 10 a. m. to noon.

The Old, Old Story.—On information sworn to by three physicians, S. W. Jacobs and Harvey M. Brown, officials of the National Aid Society, were arrested November 30, charged with a new insurance confidence game. It is claimed that the complainants were induced to buy stock in the society on the representation that they would receive stock dividends, and furthermore that they were to be called when any of the subscribers were taken ill, and were to be paid liberally for these services.

INDIANA

Personal.—Dr. Paul F. Martin has been appointed a member of the city board of health of Indianapolis, vice Dr. Frank M. Morrison, elected a member of the board of school commissioners.——Dr. Franklin P. Gillaspy, Indianapolis, received painful injuries by being struck by a street car, November 6.

Medical Society Meeting.—At the annual meeting of the Thirteenth District Medical Society, held in Warsaw, Dr. Charles J. Loring, Rochester, was elected president; Dr. Lorenzo D. Eley, Plymouth, vice-president, and Dr. C. Norman Howard, Warsaw, secretary-treasurer. The next meeting will be held in Goshen.——Fort Wayne Academy of Medicine, at its annual meeting, elected Dr. Harold K. Mouser, president; Dr. Cecil C. Kimmel, vice-president; Dr. Willis W. Carey, secretary, and Dr. Charles G. Beall, treasurer.

IOWA

Hospital News.—A new wing to cost $10,000, is to be added to the Graham Hospital, Keokuk. It will contain fourteen rooms for patients, a large kitchen, dining-room, diet kitchen, and operating-rooms.——The Sisters of Mercy have assumed charge of the Centerville Hospital.

Personal.—Dr. Elijah W. Jay, Marshalltown, was operated on for the removal of gall-stones at Augustana Hospital, Chicago, November 23.——Dr. William W. Pearson was installed as dean of Drake College of Medicine, Des Moines, November 23.——Dr. Charles F. Dietz, Tabor, is reported to be seriously ill with neuritis.——Dr. Lacy K. Bobo, Oxford Junction, has been made president of the Iowa Sanatorium, Maquoketa.——Dr. John W. Smith, Burlington, sustained painful injuries in a runaway accident, November 10.——Dr. Elbert W. Clark, Grinnell, state senator, is reported to be seriously ill at his home.

District Societies Meet.—At the annual session of the Southeastern Iowa Medical Society, held in Mount Pleasant, November 20, it was decided to hold the next meeting at Fort Madison. The following officers were elected: Dr. Charles S. James, Centerville, president; Drs. William S. Lessenger, Mount Pleasant, and Alfred O. Williams, Ottumwa, vice-presidents; and Dr. E. Francis LaForce, Burlington, secretary-treasurer.——At the fifth annual session of the Second District Medical Society, held in Davenport, November 16, the following officers were elected: President, Dr. Lawrence W. Littig, Iowa City; vice-presidents, Drs. Elbridge H. King, Muscatine, and Gordon F. Harkness, Davenport; and secretary-treasurer, Dr. John V. Littig, Davenport (reelected). The 1910 meeting is to be held in Davenport.——Des Moines County Medical Society, at its annual meeting, held in Burlington, November 10, elected Dr. Charles P. Frantz, president; Dr. Fred E. Koch, vice-president; and Dr. Julia M. Donahue, secretary, all of Burlington.

KENTUCKY

Personal.—Dr. Henry Enos Tuley, Louisville, has been appointed by the governor a delegate to represent the state at the National Rivers and Harbors Congress, held in Washington, December 8-10. He has also been elected director of the Louisville Commercial Club.

Elections.—The Louisville Clinical Society held its annual meeting, November 23, and elected Dr. Joseph W. Irwin, president; Dr. William A. Jenkins, vice-president; Dr. Henry J. Farbach, secretary; and Dr. Argus D. Willmoth, treasurer.——Todd County Medical Society, at its annual meeting, held in Elkton, elected the following officers: Dr. John R. Crittenden, Gordonsville, president; Drs. Charles M. Gower, Trenton, and Walter E. Bartlett, Kirkmansville, vice-presidents; Dr. Lee P. Trabue, Elkton, secretary; and Dr. Robert L. Boyd, Pembroke, censor.

MARYLAND

Baltimore

Personal.—Dr. Paul W. Harrison has been appointed medical missionary to Africa by the Dutch Reformed Church.——Dr. James H. Stauffer is reported to be ill in Johns Hopkins Hospital.

Sanatorium Opened.—The Berliner Memorial Infirmary was formally opened November 22. Gen. George M. Sternberg, Surgeon-General U. S. Army, retired, Washington, received the building for the directors, and Emile Berliner, donor of the sanatorium, which is a memorial to his father, made an address.

Care of Insane.—A meeting was held December 9 in the hall of the Medical and Chirurgical Faculty to forward the movement for the study and care of insane and for provision of more hospitals. Addresses were made by Dr. William F. Drewry, Central State Hospital for the Insane, Petersburg, Va.; Attorney General Isaac L. Strauss, Dr. Thomas A. Ashby, Baltimore, member of the legislature; and Dr. DeWitt C. R. Miller, Cearfoss District, state senator. The State Lunacy Commission has drafted a bill for presentation to the next legislature, which calls for the formation of a permanent board of insanity, composed of five members and the attorney general, the members serving without pay. The board is to have power to remove persons from almshouses to asylums. The executive of the board is to visit all institutions at least once every six months. The state is to be divided into hospital districts, and jurisdiction is provided by boards of visitors for each county, and annual reports from heads of institutions. The cost and maintenance of white patients is fixed at $200 per annum, and that of colored patients at $150 per annum, of which the state is to pay one-half. The board is to receive $5,000 a year for expenses, out of which a salaried executive is to be paid. License is to be required from all asylums and retreats. In addition to the two present state hospitals, an additional one is to be provided for white persons on the eastern shore and one for colored persons in southern Maryland.

MICHIGAN

Personal.—Dr. Eugene Smith, Detroit, has returned from Europe.——Dr. George R. Pray, Jackson, has been elected supreme archon of the Phi Beta Pi Medical Fraternity.

Society Meeting.—At the annual meeting of the Genesee County Medical Society, held in Flint, October 26, Dr. Noah Bates, Flint, was elected president; Dr. James W. Parker, Grand Blanc, vice-president; Dr. Myron W. Clift, Flint, secretary-treasurer; Dr. Amos S. Wheelock, Goodrich, member of the board of directors, and delegate to the state medical society, and Dr. Herbert E. Randall, Flint, alternate.

Tuberculosis Records.—Under the new state tuberculosis law, record books are provided, giving case reports of tuberculosis, including the name and address of each patient, age, nativity, sex, occupation, color, place where last employed, evidence on which diagnosis of tuberculosis is made, part of body affected, stage of disease, and name and address of person furnishing facts. These registers are open to inspection only by the health authorities, and it is not permitted that any such reports or records shall be divulged so as to disclose the identity of the persons to whom they relate.

Tuberculosis Notes.—The Detroit Society for the Study and Prevention of Tuberculosis has concurred in the report of the sanatorium committee, recommending the acceptance of a ten-acre site at Twelfth and Hamilton boulevard. The institution will be known as the Detroit Tuberculosis Sanatorium. Articles of incorporation were drawn up November 16. Dr. Burt R. Shurly has been elected president, and Dr. Herbert M. Rich, a member of the executive committee.——The new shack at the Antituberculosis Camp, east of Kalamazoo, is ready for occupancy. The building is 25x25 feet and occupies the space between two other shacks. The institution now has three large and five small shacks in use.

NEW JERSEY

Fire in Epileptic Village.—Three of the five new barns on the grounds of the State Village for Epileptics, near Pennington, were destroyed by fire, November 9, causing a loss of about $20,000.

Oppose Preventorium.—The protest of certain residents of Lakewood against the Tuberculosis Preventorium for Children in that place has received the support of the governor, who states that the establishment of an institution of that character can be done only under state authority, and refers the matter to the Commissioner of Charities and Corrections for action.

Personal.—Dr. Hyman I. Goldstein, Camden, has been elected assistant laryngologist and assistant in the nose, throat and ear and medical departments of the Lebanon Hospital, Philadelphia.——Dr. William James, German Valley, was seriously burned while attempting to save his horses from a burning stable.——Drs. George C. Becket, Winifred D. Banks, and Palmer A. Potter have been appointed medical inspectors by the East Orange Board of Education.——Dr. Luther M. Halsey, Williamstown, has been appointed medical inspector of schools of Monroe township.——Dr. Horace G. Norton, Trenton, has been elected secretary of the State Board of Medical Examiners, vice Dr. Edmund L. B. Godfrey, Camden, resigned.

NEW YORK

Antituberculosis Society.—The Syracuse branch of the New York Association for the Prevention and Cure of Tuberculosis was organized November 26. Dr. David M. Totman presided and was afterward elected one of the vice-presidents of the association.

Personal.—Dr. George S. Lape has been elected jail physician of Binghamton.——Dr. Vernon L. Bishop, Hemlock, has been appointed physician at the Matteawan State Hospital. ——Dr. J. Reid Davidson, South Bethlehem, has retired after thirty years of practice.

Lockport Physicians Organize.—The physicians of Lockport have organized a local society, known as the Lockport Academy of Medicine, have adopted a constitution and by-laws, and elected the following officers: President, Dr. Charles N. Palmer; vice-president, Dr. Flavius J. Baker; secretary, Dr. Charles L. Preisch; treasurer, Dr. Henry H. Mayne; councilors, Drs. Allan N. Moore, S. Wright Hurd, and Alexander McNamara; and trustees, Drs. Ferdinand A. Kittinger, Willis P. Weaver and Warren H. Loomis.

Sanatorium and Hospital Plans Approved.—The State Board of Charities, at a meeting November 7, approved the certificate of incorporation of the Newburgh Sanatorium, to be established by ex-Gov. B. B. Odell, Jr., at a cost of $75,000. The board also approved the proposed consolidation of the New York Infant Asylum and Child's Nursery and Hospital, to be known as the New York Infant Hospital and Child's Nursery, with joint resources of about $1,000,000, and the incorporation of the Southampton Hospital Association, which proposes to establish a general hospital at Southampton, Long Island.

New York City

Harvey Lecture.—The third lecture of the Harvey Society, delivered by Prof. T. G. Brodie, of the University of Toronto, December 11, at 8:30 p. m., at the Academy of Medicine, 17 West Forty-third street, is on "Renal Activity."

Honor Retiring Intern.—Dr. Walter E. Hurley, whose term of service as house surgeon in the Williamsburg Hospital expired December 1, was given a farewell dinner, November 29, by professional and other friends, at which a colonial clock was presented to Dr. Hurley.

Andrew McCosh Memorial.—The Andrew J. McCosh Memorial Committee has announced that $116,000 have been received. The committee has not decided definitely on the memorial, but the fund probably will be used in the erection of an operating pavilion for the new Presbyterian Hospital.

For City Hospitals.—At the last meeting of the board of estimate the largest appropriation made was for the charities department, $2,237,000, which is to be used in improving the hospital facilities on Randall's and Blackwell's islands, and for improvements in connection with the Kings County and Cumberland Street hospitals.

Appropriation for Sanatorium.—The proposed tuberculosis sanatorium for the city at Staten Island took tangible form November 23, when the Board of Aldermen passed a resolution appropriating $1,300,000 in corporate stock for the building. The board also ratified the issuance of $54,000 corporate stock for the Coney Island Hospital, and $77,000 for the Bradford Street Hospital, Brooklyn.

Clinical Society Organized.—The Clinical Society of the West Side German Dispensary and Hospital was organized November 24. Its membership is composed of members of the staff and faculty of the New York Clinical School of Medicine. The following officers were elected: Dr. Robert N. Disbrow, president; Dr. Leon F. Garrigues, vice-president, and Dr. D. Livingston Morrison, secretary. The society will meet at the hospital on the first Tuesday of each month.

Large Sums for Charity.—The will of Edward O. Kindberg, recently admitted to probate, leaves the residue of his estate, worth about $100,000, to the Presbyterian Hospital.——The death of John Masterson Burke now makes available $4,000,000 for the building of a convalescent home. In 1902 Mr. Burke conveyed to a corporation which he named the Winifred Masterson Burke Relief Foundation, property to the value of $4,000,000, the income of which was spent in caring for worthy sick during his lifetime, but now the entire sum is at the disposal of the corporation.——The will of Herman Jacoby leaves $1,000 each to the Lebanon and Beth Israel hospitals.

Academy Needs Increased Facilities.—Because of the increase in membership of the New York Academy of Medicine, and the lack of space for the rapidly increasing library, it was proposed at a meeting of the directors, December 2, to submit to the members a proposition for the erection of a new building to cost about $700,000. The proposed improvements include an increase in the library space of from 90,000 to 225,000 volumes, and the enlargement of the present building by the purchase of the adjoining lot on the east. The president appointed the following committee to submit a report December 16, and suggest a site for the new building: Drs. Edward G. Janeway, Joseph D. Bryant, Abraham Jacobi, Algernon T. Bristow, Simon Flexner, Joseph A. Blake, Reginald H. Sayre, A. Alexander Smith, Charles L. Dana, Arthur M. Jacobus, W. Gilman Thompson, William C. Lusk, L. Emmett Holt, Herman L. Collyer, Henry S. Oppenheimer, Haven Emerson and Charles N. B. Camac.

NORTH CAROLINA

Personal.—After twenty years' service as surgeon general in the state, Col. Robert S. Young, Concord, has retired with the rank of brigadier general, and has been succeeded by Lieut.-Col. S. Westray Battle, Asheville, deputy surgeon general.——Dr. Francis J. Clemenger, Asheville, has returned from Europe.

The Tuberculosis Conflict.—At a meeting in Salisbury, November 20, the Rowan County Antituberculosis Association was organized. Dr. William W. McKenzie presided over the meeting, Dr. John Whitehead was elected president, and Dr. McKenzie, secretary.——Cumberland County Antituberculosis Society was organized at Fayetteville, November 13, with the following physicians as officers: Dr. Jacob F. Highsmith, Fayetteville, secretary-treasurer; and Dr. Kirby G. Averitt, Cedar Creek, second vice-president.——The North Carolina Association for the Prevention of Tuberculosis will hold its annual meeting in Greensboro, Jan. 25, 1910, under the presidency of W. L. Dunn. Dr. Livingston Farrand, New York, executive secretary of the national association, will deliver a popular address, and a tuberculosis exhibit will be held.——Dr. Charles A. Julian, secretary of the State Association for the Prevention of Tuberculosis, is holding special meetings and organizing local antituberculosis societies. He has requested all ministers to designate a day on which special sermons will be preached along sanitary lines. The governor commends the idea to the clergy. A Sunday in March is to be selected as *Sanitary Sunday*.

OHIO

Medical Teachers to Meet.—The Ohio Association of Medical Teachers will meet at the Southern Hotel, Columbus, December 27, afternoon and evening. Dr. James U. Barnhill is president and Dr. E. I. McKesson, secretary.

Personal.—While hunting near Marysville, November 23, Dr. Lutrelle M. Henderson was accidentally shot, but was not seriously wounded.——The board of trustees of the Toledo State Hospital has elected Dr. William H. Beggs, Columbus Grove, president, and Dr. George R. Love, Toledo, secretary.——Drs. Kinson S. West and Adams B. Howard, Cleveland, have started for Great Britain.

Cincinnati

Medical Research Society Election.—At the annual election of the Cincinnati Society for Medical Research, the following officers were elected: President, Dr. Paul Wooley; vice-president, Dr. William Wherry; secretary-treasurer, Dr. Jacob L. Tuechter, and executive committee, Drs. Sidney Lange and Joseph Ransohoff.

Celebrate College Union.—The union of the Ohio and Miami Medical Colleges was celebrated by the University of Cincinnati, December 1, at McMicken Hall. The chief address of the evening was delivered by Dr. Victor C. Vaughan, dean of the College of Medicine of the University of Michigan. A reception for the officers and guests of the University followed.

Personal.—Dr. Louis Schwab, mayor-elect, has resigned as medical director of the Cincinnati Hospital, and Dr. Byron Stanton, president of the State Board of Health, has been elected in his stead. Dr. Schwab was guest of honor at a banquet tendered by brother practitioners, November 24. Dr. Charles L. Bonifield acted as toastmaster and Dr. Schwab, in his response, spoke of the urgent need of an improvement in the sewage of the city.——Dr. Miriam Schaar, chief of the Bureau of School Hygiene, has resigned to take effect January 1.

PENNSYLVANIA

Philadelphia

Addition to the Mutter Museum.—A collection of vesical calculi and surgical instruments, formerly belonging to Dr. John B. Mettauer, Richmond, Va., were presented to the Mutter Museum of the College of Physicians by Dr. George Ben Johnston, Richmond.

Mutter Lecture.—The Mutter Lecture for 1909 will be delivered in the Cadwalader Room of the College of Physicians, December 10, by Dr. Henry D. Fry, Washington, D. C, professor of obstetrics in Georgetown University. His subject will be "The Nutritional Changes Occurring in the Fibromyomata of the Uterus Incident to Pregnancy and Puerperium."

Heavy Tuberculosis Mortality.—The large weekly mortality rate from tuberculosis has made it necessary for Dr. Joseph Neff, Director of Public Health and Charities, to ask Councils for appropriations to establish day camps for tubercular patients and for other preventatives and curatives. Of the total of 426 deaths reported last week, 117 were caused by tuberculosis.

New Hospital Plan.—A plan to affiliate the Philadelphia Polyclinic and College for Graduates in Medicine, known as the Polyclinic Hospital, with some other institution, was proposed at the last meeting of the directors. If carried out the institution will in the future be only a hospital and the college for graduates in medicine be dropped. The college and hospital were founded in 1883 and constitute the only institution of the kind in the state.

New Cars Decrease Accidents.—Figures have been compiled showing a year's operation of the Rapid Transit Company's pay-within cars, having the closed doors and steps. During the month of October on one line alone there was a decrease in accidents of 74 per cent. In the five heaviest months of the year, April, May, June, July and August, accidents on the Fifty-second street division decreased 79 per cent. compared with the same period of last year when no pay-within cars were used. The number of passengers on this line increased 11.2 to 12.5 per car mile. The greatest number of injuries have been caused by boarding and alighting from cars, a class of accidents entirely avoided by the pay-within car.

Old Hospital Corner-Stone Removed.—The corner-stone of the recently demolished executive building of the Municipal Hospital at Twenty-second and Lehigh avenues was taken from the old grounds, which are being converted into a public park, on December 3, and sent to the bureau of city property in City Hall. It was found to contain the daily papers of Feb. 1, 1864, together with a list of the members of Councils of that year and the names of city officials and the special commission, of which Dr. John B. Biddle was president, appointed for the purpose of obtaining a site and erecting a building for municipal hospital purposes. The ordinance was dated Nov. 24, 1862, and provided that the site should not exceed $10,000 in cost, and the cost of buildings was limited to $30,000. The site is now valued at $200,000.

GENERAL NEWS AND COMMENT

Colorado Medicine.—No reform is accomplished without self-sacrifice and often those who are most ready to assume the burdens are those who would seem least fitted to bear them. The Colorado State Medical Society is not the largest, strongest, or wealthiest of the state associations. Its members number only 778, and the publication of a journal of any kind by this society speaks well for the energy and devotion of its members. When, however, it publishes a periodical which, in the cleanness of its advertising pages as well as the scientific and practical character of its reading matter, can compare favorably with the publications of much larger associations, it is entitled to all the more credit. *Colorado Medicine*, the monthly published by the Colorado State Medical Society, is only in its sixth year, yet from the beginning it has kept a high standard for its advertising pages and has placed the good of its membership above its advertising receipts. The Colorado profession is to be congratulated on having had the right man to manage its official paper.

Chiari to Give Herter Lectures.—The next course of lectures on the Herter Foundation in Johns Hopkins Medical School, Baltimore, will be given Oct. 5, 6 and 7, 1910, by Dr. Hans

Chiari, professor of pathologic anatomy in the University of Strassburg. His subjects will be: (1) "Significance of the Amnion in the Origin of Human Monstrosities;" (2) "Necrosis of the Pancreas;" and (3) "Spondylolisthesis."

Mexican Association to Meet.—The International Medical Association of Mexico announces that its next meeting will be held at Aguascalientes, January 25-27. The officers of the association are Dr. S. H. Hodson, Tampico, president; Drs. C. L. Bennett, Aguascalientes, and J. McPherson, Salina Cruz, Oaxaca, vice-presidents; Dr. J. S. Steele, Monterey, N. L. secretary-treasurer; Drs. Carlos E. Husk, Santa Barbara, Chihuahua, C. E. Cramb, Mapimi, Durango, and R. H. L. Bibb, Saltillo, Coahuila, censors; and Drs. R. D. Robinson and W. R. Jamieson, Torreon, Coahuila, editors of the *Annual*. The work of the association is divided into three sections: first, "original articles;" second, "rehashes;" and third, "emergencies and mistakes."

FOREIGN

Association of Italian Medical Press.—The representatives of the various scientific journals published in Italy met at Genoa, October 24, to organize the Association of the Scientific Press with departments for the various sciences. The medical department has taken for its tasks a campaign against the pseudoscientific medical journals representing commercial interests, and the defense of the Italian language in international congresses.

Death of Duke Karl Theodor, the Royal Ophthalmologist.—Duke Karl Theodor of Bavaria, the well-known ophthalmologist, succumbed to kidney trouble on November 30, at Bayreuth in Bavaria. He was the head of the ducal line of the Bavarian house, and one of his sisters was the empress of Austria, assassinated a few years ago at Geneva; the other sister, the duchesse d'Alençon, lost her life in the Paris charity bazaar fire. One of his daughters is the wife of the crown prince of Belgium, and the other the wife of the heir to the throne of Bavaria. Duke Karl has published a number of good works on ophthalmologic subjects, and had an extensive practice, but charged no fees. He founded and sustained a free eye hospital for his patients. His seventieth birthday was celebrated August 9, on which occasion our Berlin correspondent reviewed his scientific career (page 807).

Other Deaths in the Profession Abroad.—A. O. Lindfors, who was professor of obstetrics and gynecology at the University of Upsala, died while on a trip to England, aged 67. He published a number of works on these specialties, both in Scandinavian and German journals, among them his account of the first successful operation for umbilical hernia.——L. Katz, professor of otology at the University of Berlin, and author of microphotographic atlases of the internal ear, etc., died in September, aged 61.——Prof. A. Dohrn, the founder and director of the Zoologic Station at Naples, the cradle of so much important biologic research by investigators of all countries, died at Munich September 26, aged 59. He is said to have been the first to call attention to the transformation of functions of organs.

Diplobacillus Alleged Causal Germ of Exanthematous Typhus. The *Centralblatt für Bakteriologie*, Oct. 30, 1909, contains an article by M. Rabinowitsch of Kief, Russia, on the local endemic of exanthematous typhus and announcing that he has been able to isolate from the blood and organs a diplobacillus which shows up with the Giemsa stain and induces in laboratory animals a disease closely resembling typhus in man. He states that poverty and destitution in Russia have reached their highest point in the last three years, and that endemic fevers have kept pace with them. Between 1900 and 1906 there were 1,515 cases of exanthematous typhus at Kief, with 124 deaths; 2,873 of typhoid, with 275 deaths, and 332 of relapsing fever, with 4 deaths. Since the beginning of 1906 to the beginning of 1909 there have been enough more cases to bring the totals for the last eight years to 3,261 cases of exanthematous fever, with 297 deaths; 6,118 of typhoid, with 734 deaths, and 13,574 of relapsing fever, with 397 deaths. Since April, 1908, there were in the local prisons alone 840 men and 27 women affected with exanthematous typhus. He assumes that germs lose or acquire certain properties by passage through the animal organism or by breeding in filth, and that poverty and unhygienic conditions, by reducing the resisting powers, favor endemics in general. In the overcrowded Russian prisons some of the men have to lie on the floor close up to the door near which is installed the historically famous "parascha," the can used by the prisoners for their excreta, and which is emptied only once a day. The political prisoners are kept separate, he says, and only a few among them have contracted typhus. The mortality in the prisons has been 23 per cent., while in the general population it was only 8.1 per cent. The distribution of the three endemic fevers throughout the town seems to show that the means of dissemination are practically the same for all. We fail to recognize the pathogenic germs when encountered outside of the body because they have lost certain properties by which we are accustom [illegible] specific bacillus seems to have a [illegible] he remarks.

PARIS LETTER

(From Our Regular Correspondent)

Paris, Nov. 25, 1909.

The Infectious Nature of Infantile Diarrheas

Some authors have disputed the bacteriologic origin of infantile diarrheas and have attributed it to alimentary intoxication or to external causes, such as excessive variations of temperature. M. Metchnikoff, at the last session of the Academy of Medicine, made an important communication which tends to show the infectious nature of infantile diarrhea. He finds that suckling rabbits often contract a fatal diarrhea after having absorbed a small quantity of the dejections of infants affected with acute gastro-enteritis. A young chimpanzee which had been given a little of the green diarrheic injections of a baby of six months was abruptly seized with a severe diarrhea which lasted four weeks, and a second chimpanzee which was given some of the diarrheic matter of the first chimpanzee also had diarrhea the next day. According to the researches of M. Metchnikoff, the pathogenic microbe of gastro-enteritis is the *Bacillus proteus*. Hence, it becomes difficult to hold cows' milk responsible for infantile diarrhea, since out of every ten samples of cows' milk, only two contain the *Bacillus proteus*. Moreover, many cases of gastro-enteritis are observed in breast-fed children. It seems probable, therefore, that it is not cows' milk, but rather the persons who care for the infants who communicate the infectious agent to them. The *Bacillus proteus* is very abundant in the dejections of animals (the cow, dog, horse); it is probably carried thence by flies to various foodstuffs, such as raw meat, cheese, grapes, salad, vegetables, etc., which, eaten without being disinfected, carry the microbe into the alimentary canal. The prolonged contact of infected persons with infants is sufficient to contaminate the latter. To protect infants from gastro-enteritis, therefore, it is not sufficient to sterilize the cows' milk that is fed to them; it is necessary, also, that the hands and the breasts of the women who suckle them should be frequently washed with soap, and that the persons who care for the infants take precautions not to become infected with the *Bacillus proteus*. To this end M. Metchnikoff recommends washing fruits and vegetables, especially salad vegetables, with boiling water, and even singeing cheese crusts.

Limitation of the Number of Medical Students

At the next Congress of Practitioners, which will be held at Paris at the end of March. 1910, the question of limitation or non-limitation of the number of medical students who enter the schools will be discussed. In order to diminish the oversupply which seems to prevail in the medical profession, some physicians propose to establish competitive entrance examinations for the young people who intend to enter a medical career. As I have had occasion to show in a former letter, however (The Journal, Aug. 29, 1908, li, 771), the situation from which the medical profession in France suffers depends, not on the overproduction of physicians, but rather on the bad distribution, a greater number of young physicians seeking to settle in Paris and the large cities, where they drag out a miserable existence, when they might earn a livelihood in the country.

Medical Secrecy with Respect to the Insane

Dr. Pradel has laid before the *Syndicat médical de Paris* a delicate and embarrassing case. A physician had attended a married man who had become insane and had been placed in an institution. The patient had died, leaving a will disinheriting his widow, who, in order that she might contest the will, had asked the physician who attended her husband before he was placed in the institution, for a certificate stating that her husband had had mental trouble at a date anterior to that of the will. The question that Dr. Pradel raised was whether the family physician could give the widow a certificate to that effect. This communication called forth a warm debate and most dissentient opinions. Dr. Chassevant, professor *agrégé* at the Paris medical school, declared that the physician had not the right to deliver such a certificate, because it would be a violation of professional secrecy. Dr. Dalché, physician of the hospitals of Paris, believed that, whatever grounds there might be for giving such a certificate, the law forbade it. Dr. Biarbeau, on the contrary, believed that when a patient had been examined and declared insane, professional secrecy was no longer due to the patient, while his wife had a certain right to demand a certificate stating that there had been mental trouble dating from a certain time, consequently, the physician would not violate professional secrecy by granting it. Dr. Granjux, secretary of the staff of the *Bulletin Médical*, insisted that the first duty of the physician was to protect a patient with mental disease by making his condition known to the person who represented the family and indicating the precautions necessary to take. These precautions in reality constitute measures restrictive of individual liberty, and the guardian who executes them has an indisputable right, in order to justify his responsibility, to exact from the physician a written statement of the necessity of such measures. Even if the patient's guardian does not demand a certificate at the time, he might need and demand it later; and in such cases the physician can do nothing else than to protect the patient's representative from responsibility for the measures that he himself has prescribed.

The Public First Aid Service

Dr. Thoinot has just given to the Council on Public Hygiene and Salubrity of the department of the Seine a report on the work of the first aid service (*secours publiques*) during the year 1908. The pavilions established in Paris along the banks of the Seine and the canals for first aid to the apparently drowned have received 392 patients (228 men and 164 women), twelve of whom having been too long in the water could not be resuscitated; 165 of these had thrown themselves into the water. The stations established in the suburbs received 15 apparently drowned persons, of whom only one could not be revived. Of sick and wounded persons 260 (238 wounded and 28 sick) were cared for in the various first-aid posts of Paris. Ninety-five persons (88 wounded and 7 sick) were cared for in the suburbs. The special ambulances used at the time of public ceremonies and holidays received 326. The litters of the various stations of the arrondissements have been used 290 times. In short, the first-aid service has given aid during 1908 to 1,378 persons, 407 of whom had been apparently drowned.

Prizes of the Academy of Sciences

The Academy of Sciences has just awarded the following prizes: the Montyon prize ($150 or 750 francs) was divided between M. Charles Dhéré, professor of physiology at the University of Fribourg, Switzerland, for his "Spectrographic Researches on Absorption of Ultra-Violet Rays by the Albuminoids, the Proteids and Their Derivatives," and M. E. Pozerski, of the Pasteur Institute at Paris, for a work entitled "Contribution to the Study of Papain." The Philipeaux prize ($180 or 900 francs) was given to Dr. J. E. Abelous, professor of physiology at the Toulouse medical school and Dr. E. Barbier, professor *agrégé* at the same school for their works on "The Hypertensive Actions of Urines and Urohypertensin." The Lallemand prize ($360 or 1,800 francs) was divided between M. Auguste Petit (for his work on "The Brains of *Grampus griseus, Steno frontatus* and *Globicephalus melas*") and M. Gustave Roussy, of the school of higher studies at the College of France, for his work entitled "The Optic Thalamus, The Thalamic Syndrome." The La Caze prize ($2,000 or 10,000 francs) was given to Dr. Delezenne of the Pasteur Institute at Paris for his collective works. The Barbier prize ($400 or 2,000 francs) was divided between M. L. Launoy (for a series of works on the "Nuclear Phenomena of Secretion," "The Histophysiology of Pancreatic Secretion," "The Autolysis of Organs and Endocellular Ferments," and "The Aseptic Autolysis of the Liver") and M. J. Lesage, now professor of physiology at the institute of agronomy at Buenos Ayres for his memoir: "Experimental Researches on Maté." The Parkin prize ($680 or 3,400 francs) was awarded to M. Adolphe Cartaz for his memoir on "The Employment of Carbon Dioxid in Diseases of the Nose and Throat."

LONDON LETTER

(From Our Regular Correspondent)

London, Nov. 27, 1909.

The Declining Birth Rate

The president of the Royal Statistical Society, Sir. A. Baines, devoted his inaugural address to "The Recent Growth of Population in Western Europe." The population with which he dealt in 1900 numbered 239,000,000. During the last thirty years the Teutonic element has risen from 53 to 58 per cent. and the Latin has fallen from 44 to 40 per cent. Ireland alone shows an actual decrease of 17 per cent. The general increase is just under 31 per cent., conventionally held to have been normal for the last century. A generation ago the marriage rate was held to be a good barometer of prosperity and wherever there was room for a couple to live up to the conventional standard a marriage took place. But the standard of living and the power of convention over it has risen. On the whole there has been a slight falling off in the marriage rate during the last thirty years, which is especially marked among the already low rates of Scandinavia and in France and Italy. The increased avoidance of matrimony is most marked in the United Kingdom and in North Scandinavia. The mean age of wives has risen considerably in the United Kingdom but the decline of the birth-rate is still greater and cannot be accounted for by this cause. The rate of decline is even greater than in France. Until the present generation the systematic adoption of the limitation of offspring by married persons had been practiced only in the latter country. Now it has permeated this and other countries. As a result we are beginning to have in the green what is so apparent in the dry in France—an increasing preponderance of the population in or past its prime. In spite of the decreasing birth-rate a natural increase of the population continues, because everywhere the death-rate has fallen much faster than the birth-rate. Comparing the different countries the natural increase of population is greatest in Scandinavia, England and Holland occupy a middle position, and France falls behind the rest.

New Factory Act for India

The introduction of western industrialism into India has rendered necessary the adoption of regulations for labor analogous to those of European countries. The first factory act was passed in 1881. It provided for fencing of machinery, inspection and reporting of accidents, and limited hours of children's labor to nine. Seven was fixed as the lowest age for the employment of children, who remained in that category up to the age of twelve. In 1891 another act was passed raising the lowest age for the employment of children from 7 to 9, and the maximum age when they are considered such to 14. Their hours of labor were reduced to 7, the hours of women were limited to 11. A midday stoppage and a weekly holiday were prescribed for all hands. Except for the weekly holiday no restrictions were placed on the labor of adult males. There was no desire among the male operatives that their hours should be limited by law. Nature however imposed limits—the hours of daylight, which average about 12 throughout the year. But the introduction of the electric light has abolished this restriction. In 1904-05 there was a boom in the cotton industry in Bombay and the hands were overworked, though well paid. Adults, and sometimes children, worked as much as 15 hours daily or more and the conditions were denounced as a scandal and attracted public attention. The government, therefore, instituted an inquiry by a committee containing physicians and health officers, who reported in favor of a twelve-hour day. The committee found that the conditions of work in the textile factories were calculated to cause physical deterioration and it was struck by the absence of elderly men, although the demand for labor was much in excess of the supply. The government has now passed a new act limiting the hours of labor to twelve. Employment of women before 5:30 a. m. or after 7 p. m. is forbidden and, unless an approved shift system is adopted, of adult males also. Regulations are made for ventilation, lighting, water supply, latrines, protection against fire, etc. After six hours work there must be an interval of half an hour. A child must be examined and obtain a certificate before employment in a factory. No child must be employed more than six hours in a textile factory. The most important new departure is the regulation of the hours of adult labor. The Indian laborer prefers to work leisurely for long hours with frequent rests rather than work strenuously for shorter hours.

The Royal College of Surgeons

The annual meeting of the fellows and members of the Royal College of Surgeons has been held. The president, Mr. Henry Butlin, expressed doubts whether the proposed combination with the University of London for the purpose of rendering a medical degree more accessible to London students (referred to in a previous letter) was possible. Everything should be done to bring about this object by lowering the standard of examination for the benefit of students educated in London, who suffered great disabilities and disadvantages compared with those educated in the provinces and in

Scotland and Ireland, where a medical degree was obtained more easily. A long discussion took place on the granting of members the right of direct representation on the council (the governing body of the college). At present the council is elected entirely by the fellows, who form a small minority. These holders of the superior qualification are nearly all hospital surgeons and include practically all the names eminent in English surgery. The members number 17,000 and are nearly all general practitioners, the rank and file of the profession. The annual meeting of fellows and members is the only occasion on which the members have any opportunity of expressing their views with regard to the government of the college. For the past twenty-five years they have passed a resolution demanding representation on the council which has never been followed by any action by that body. The members urge that they contribute the largest amount of money (in examination fees) to the upkeep of the college and that their exclusion from representation is not in consonance with modern democratic ideas. However, no allegation has ever been made by them that government of the college is not carried on in the best possible manner and they have never suggested important reforms which should be carried out. Though [illegible] in the hands of an oligarchy it is an [illegible]est possible kind—an aristocracy of bra[illegible], examination is open to every member and requires only the requisite ability and knowledge. It may therefore be contended that the present government is democratic in the best sense. A resolution was also carried in favor of the promotion of a new charter and act of parliament for the incorporation of the Royal College of Surgeons and Physicians with the University of London with the object of facilitating the obtaining of degrees by London students.

Radium from Uranium

At the Physical Society of London, Mr. Soddy read a paper on this subject which is of interest in view of the therapeutic uses of radium. Measurements on the growth of radium in three uranium solutions purified between three and four years ago have shown that in all the growth of radium is proceding at a rate proportional to the square of the time. This result indicates the existence of only one long-lived intermediate product in the series between uranium and radium. The period of the average life of this body, calculated on the assumption that no other intermediate bodies exist, is 18,500 years.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, Nov. 24, 1909.

The New Bill for the Care of the Insane

Our "lunatic act" (*Irrengesetz*), as it is called, is so behind the requirements of modern times that its reform is the first aim of the new chief board of health (*oberste Sanitäts Rat*). A reform of the clause dealing with the voluntary or involuntary admission of a person of unsound mind into a "sanitarium" is most urgently called for. In future the seclusion of a person supposed to be of unsound mind must be reported to the local authorities within twenty-four hours, if it be a member of the family, or within eight days, if it be a stranger. Then the public health officer has to examine the patient and to report to the board of health whether the person must be detained in a lunatic asylum or any other suitable sanitarium or may be left in charge of his friends. If the patient is dangerous to himself, those around him or the public, or he would be apt to suffer from neglect at home, he must be detained in an asylum. If the patient has no friends the local magistrates may at once order the detention, if the case is dangerous. The patient may be detained against his will or the will of his friends under the following conditions: If the officer of health finds it necessary; if a public judge orders it after hearing medical evidence; if the legitimate representative or guardian of a person under age requires it; or if a person traveling on a railroad or other public conveyance is found to be of unsound mind and the health officer considers him a public danger. Any such case must be reported at once to the board of health, for as the first sentence of the new law says, "all persons who on account of a defect of their mental capacities require special care enjoy the protection of public administration." For this purpose a special inspector for the mentally afflicted (*Irreninspector*), with assistants, will be appointed on the board of health. It is therefore intended to institute a psychiatric sanitary board. The official name of an institution for the insane will no longer be "lunatic asylum," but "sanitarium" (*Heil- und Pflegeanstalt*). If a person desires to be detained voluntarily in a mental sanitarium, a request must be signed by the patient himself, and a testimony by a qualified medical man, who is related neither to the patient nor to the owner or director of the sanitarium, must be produced. Such cases also must be reported within twenty-four hours to the inspectorate mentioned above.

Personal

The newly elected chief board of health, which for the first time since its existence contains also a number of country practitioners, held its first meeting for organization a few days ago, and Prof. Ernst Ludwig, the chief analytical chemist of the University of Vienna, was elected president, and Professor Weichselbaum, the well-known pathologist, vice-president, together with Professor Chrobak. Professor Horbaczewski was elected president of the committee for water-supplies, Mauthner, vice-president, Professor Exner, the celebrated physiologist, was elected president of the committee for health resorts, mineral waters and balneologic matters.

The Reform of Contract Practice and the Profession

A subcommittee of the Austrian parliament recently discussed the new arrangements suggested in connection with the proposed "social insurance bill." Representatives of medical councils and organizations were admitted to the inquiry. While employers and employees are willing to concede to the profession only that persons earning more than 4,800 crowns ($960) a year should be exempt from the compulsory insurance against sickness, the doctors wish the limit to be 2,400 crowns ($480). It must be kept in mind that in this country income taxes must be paid from an income of 1,200 crowns, or $240, showing that living is cheaper than in America, since this sum is considered enough to live on. More than 73,000 persons in employment, who are not members of a *Krankenkassa* or sick benefit club, earn over 2,400 and less than 4,800 crowns, so that this important class of the population would be lost for the profession as possible patients. This would mean the ruin of the profession. The figures are official. The government plan favors the lower figure as limit for the compulsory insurance. No consensus of opinion being obtained at the inquiry, and the parliaments being willing to disregard the interests of the profession, energetic measures are contemplated by the organization of practitioners, a young but active combination of doctors. In fact, if the law should pass the house and not pay due consideration to our profession, a general strike is already spoken of. But it is hoped that such a step will not be necessary.

Pharmacology

MORE PRESCRIPTION FAKES

Answers to Correspondents as a Means of Exploiting Nostrums

One of the "features" of the modern metropolitan daily is the "Woman's Page," in which is given, for the education or delectation of feminine readers, reading matter that ranges from the useful to the inane. Naturally enough, we find the important subject of care of the health learnedly (?) discussed by the "Madames" or "Mademoiselles" who have charge of these departments. To the "patent-medicine" advertiser who would deceive the reader by publishing his advertisement in "reading-matter" style, space on these "woman's pages" is a valuable asset. A form of deceptive advertisement that of late has become very popular with nostrum exploiters has previously been referred to in these columns as "prescription fakes." The advertisements are usually set as reading matter and contain information regarding the treatment of some physical ailment by means of the drugs contained in an innocent looking formula; usually all the drugs but one are official, the exception being a "patent medicine" with a name not unlike the pharmacopeial preparations. A modification of the "prescription fake" type of advertisement forms the subject of this article.

"HEALTH AND BEAUTY TALKS"

For several months past many newspapers have been carrying on the "woman's page" what, to the uninitiated, appears to be a department devoted to answering queries regarding health. The "department" is entitled "Health and Beauty

Talks," or "Health and Beauty Helps," or "Aids" or "Secrets"—the last word of the title varying with the copy. Under the title is the legend "By Mrs. Mae Martyn." The subject-matter consists of information (?) on questions of health, given in the "answers to correspondents" form; the first and last "answer" usually makes reference to none but simple home remedies or pharmacopeial preparations. For instance:

> Q.: A good foot wash is made of a pint of water, to which are added a tablespoonful of salt and a pinch of alum and a few drops of arnica.

Every other "answer," however, contains a "joker" in the form of a nostrum, which is referred to in such a way as to lead the unsuspecting reader to imagine that it is but an ordinary official drug. Thus, in the advertisement before us, there are nine replies. Here is a sample:

> Ethel J.: (1) It made me happy to read your letter. I am glad you think so well of my recipes that you cut them out and pass them along to your friends. None should have difficulty in getting from her druggist any ingredient I name, for I never advise the use of anything that is not sold in first-class drug stores everywhere. (2) The only objection I know to the use of liquid complexion beautifiers is their high cost when purchased in a ready manufactured state. You can make at home a fine "liquid powder" that softens and whitens the skin by putting 2 teaspoonfuls of glycerin and 4 ounces of spurmax in ½ pint of boiling water; let stand until cold. Apply with the palm of the hand and rub until dry. I prefer this spurmax wash to any face powder I can buy.

The "joker" in this "answer," of course, is spurmax. In the other "replies," all worded in the same deceptive way, the reader is urged to get:

Crystos: for "tired and inflamed eyes."

Almozoin: for "blackheads . . . freckles and tan."

Canthrox: "for shampooing purposes."

Quinola: "to remove dandruff, stop falling hair, relieve itching . . . and promote the growth of hair."

Parnotis: "a flesh reducer that . . . should reduce your weight 10 pounds in a few weeks."

Kardene: "a splendid blood tonic and liver invigorator . . . for pimples, yellow blotches, sallow complexion, scrofula and all eruptions of the skin."

Luxor: "a very dear friend of mine cured a most obstinate case of eczema with this remedy."

Every week or so "Mrs. Mae Martyn's" fake department will appear in the paper, the initials of the "correspondents" and the wording of the "answers" varying, but the usual changes being rung on spurmax, crystos, almozoin, canthrox, quinola, parnotis, kardene and luxor.

Should the innocent reader go to the drug store and ask, say, for four ounces of spurmax, she is given the inevitable "original package," consisting of a tin box bearing a label with the name of the preparation, the method of using it and the various conditions for which the nostrum is recommended. There is also the statement: "made by H. S. Peterson & Co., 95-97 Kinzie St., Chicago." The company putting out these medicinal agents is not a firm of pharmaceutical chemists, but, we understand, manufactures flavoring extracts and does business largely by means of women agents throughout the country.

Four of these deceptively advertised nostrums were analyzed in the Association's laboratory. The laboratory report follows:

ALMOZOIN

Almozoin, as found on the market, is a pale pinkish-white powder, having a faint odor like benzaldehyd. Qualitative examination of almozoin demonstrated the presence of magnesium, sodium, tragacanth, a carbonate and a borate. Free boric acid, ammonium salts and sulphates were absent. Magnesium and the borate radicle were determined and the tragacanth was approximately estimated. From the results of the examination it would appear that the composition of almozoin is essentially as follows:

Tragacanth (gum tragacanth)	40 per cent.
Sodium borate (borax)	40 per cent.
Magnesium carbonate	20 per cent.

[Retail price of almozoin, one-half dollar; estimated cost of ingredients, three cents.]

CRYSTOS

The specimen package of crystos which was purchased contained about one ounce and was a coarse, *white, odorless* powder. Qualitative tests demonstrated the presence of chlorid, free boric acid, borate, sodium and traces of sulphate. Alkaloids, ammonium salts, carbonates, heavy metals and potassium were absent. Determinations of chlorid and of free and of combined boric acid were made, from which it would appear that the composition of crystos is about as follows:

Dried sodium borate (dried borax)	20 per cent.
Sodium chlorid (common salt)	20 per cent.
Boric acid	60 per cent.

[Retail price of crystos, one-half dollar; estimated cost of ingredients, one cent.]

PARNOTIS

Parnotis is a pale, cream-colored, fine powder, having an odor resembling cologne, which dissolves in water and forms a turbid solution, which becomes clear by filtration. Qualitative examination of the preparation demonstrated the presence of a bicarbonate, sulphate, sodium and traces of chlorid and of iron. Quantitative determinations of the sulphate and of the bicarbonate were made, from the results of which it would appear that parnotis consists essentially of:

Impure anhydrous sodium sulphate	25 per cent.
Sodium bicarbonate	75 per cent.

[Retail price of parnotis, one-half dollar; estimated cost of ingredients, less than two cents.]

SPURMAX

Spurmax is a pink, crystalline powder, highly perfumed. Qualitative tests demonstrated the presence of magnesium and of a sulphate. The absence of more than traces of chlorid, carbonate, organic compounds and heavy metals was shown by the usual tests. Quantitative determinations were made for magnesium, for sulphate and for water. Microscopic examination indicated that the coloring matter was very unevenly distributed throughout the preparation, some crystals being colorless, while others were very highly colored. Essentially, spurmax consists of:

Crystallized magnesium sulphate (Epsom salts)	100 per cent.
Perfume	trace
Coloring matter	trace

[Retail price of spurmax, one-half dollar; estimated cost of ingredients, one cent.]

NEW FORM OF AN OLD TRICK

Spurmax, then, when subjected to the critical light of analysis and shorn of the hypothetical virtues with which "Mrs. Mae Martyn" invests it, proves to be Epsom salts colored pink and rendered highly odoriferous; the "flesh reducer that . . . should reduce your weight 10 pounds in a few weeks," contains, apparently, nothing more marvelous than sulphate and bicarbonate of soda—and so it goes. The old, old trick of the charlatan, the quack and the nostrum exploiter is again in evidence: Give some well-known drug a fancy name, disguise it physically if possible, advertise it as possessing marvelous virtues and sell it at a price out of all proportion to its value.

The petty dishonesty shown in the method of exploiting these nostrums by means of a fake "woman's department" is disgusting. That otherwise reputable newspapers should sell their pages for such a bare-faced deception and defraud their readers by giving editorial sanction—for that is what a fake "answers to correspondents" department does—to a "patent-medicine" humbug, does not tend to increase one's confidence in the daily press. It is but fair to say, however, that some of the more particular papers insist on making plain to the reader that the thing is an advertisement, either by placing the abbreviation [Adv.-] after the last "answer," or else by placing the matter on a page given over wholly to advertising. Such a course at least gives the reader some protection, as any advertisement inspires the attitude of *caveat emptor*.

Doubtless the financial returns from this style of advertising are a potent influence with those newspaper proprietors who are willing to carry this matter in the form of an original department. Advertisements as "straight reading matter" come high, but the profits derived from the sale of Epsom salts at $2 a pound are probably sufficient to bear it. Meanwhile, the "ultimate consumer," as usual, pays the bills.

BOARD OF TRUSTEES OF THE U. S. PHARMACOPEIAL CONVENTION

Report of the November Meeting

The Board of Trustees of the United States Pharmacopeial Convention met at Hotel Walton, Philadelphia, November 26 and 27, with the vice-chairman, James H. Beal, in the chair, and the secretary, Murray G. Motter, recording the proceedings. Members present were as follows: James H. Beal, Scio, O.; Frederick W. Meissner, Jr., LaPorte, Ind.; Joseph P. Remington, Philadelphia; George H. Simmons, Chicago, and Henry M. Whelpley, St. Louis. H. C. Wood and Charles E. Dohme were absent, owing to illness.

The secretary was instructed to notify a publisher who had failed to recognize the copyright of the Pharmacopeia that the matter would be placed in the hands of an attorney unless the terms of the agreement were complied with by the publisher at once.

The board approved of a form of credentials to the 1910 convention, as presented by the committee on credentials.

It was decided to submit to the 1910 convention an amendment to the constitution which, if passed, will admit delegates from the Department of Agriculture of the United States Government.

Requests were received from numerous other bodies not entitled to representation in the 1910 convention under the present constitution. The board of trustees was requested to take the necessary steps to present to the convention an amendment to the constitution which, if passed by a three-fourths vote of the convention, will entitle these organizations to representation. After discussion, definite action was postponed until the January meeting.

The board of trustees considered other recommendations to be made to the 1910 convention and gave special attention to the subject of size, constitution and work of the committee on revision. Formal action was postponed until the next meeting.

The committee on credentials and arrangements for the 1910 convention met and organized by the election of Oliver T. Osborne, chairman, and Murray Galt Motter, secretary. H. C. Wood, Jr., Samuel L. Hilton, James H. Beal, W. L. Cliffe, and H. M. Whelpley were also present. A synopsis of the proceedings, with information about the appointment of delegates will be furnished the medical and pharmaceutical press by the secretary of the committee, in the near future.

Henry M. Whelpley,
Secretary U. S. Pharmacopeial Convention.

Correspondence

Meat Extracts and Beef Juices

To the Editor:—The editorial on this subject and the excellent work referred to on the same subject by the Council on Pharmacy and Chemistry (The Journal, Nov. 20, 1909, liii, 1744, 1754) are a timely warning to the medical profession. Some of the points presented, however, are not sufficiently emphasized and may even be misleading. The article presents the main objection to meat extracts and juices to be on account of probable starvation to the patient using them; it is stated (page 1744) that "it is even more important to *note the* surprisingly low calorific value" of meat extract and (page 1756) that "the physician is deceiving himself, starving his patients," etc.

More recent research shows that "starvation" is not the only danger in the use of such preparations, but that the extractives themselves are toxic to the body, either on their own part or by increasing bacterial growth in the gastro-intestinal tract, which results in a still further elaboration of substances acting like toxins.

In preparing meat juice for consumption, it is necessary to take 2.9 to 3.9 per cent. extractives (Bulletin No. 21, U. S. Dept. Agricult.) in order to obtain 2.19 to 6.97 per cent. of coagulable proteids, varying according to the method of expression. And the conclusion that such meat juice might have considerable value as food is open to serious objection on account of the simultaneous intake of so large an amount of toxic substance.

In the threatening convulsions of uremia, cholemia, eclampsia, etc., it is strictly contraindicated to prescribe meat juice, bouillons, or other foods containing meat extracts, on account of the danger of precipitating a convulsive attack and death In many chronic conditions, such as gout, rheumatism, arteriosclerosis, kidney and liver diseases, appendicitis, ulcer of the stomach or duodenum, and in many nervous diseases, meat and meat juices are positively contraindicated.

In the surgical clinics in certain districts in Europe I recently observed a series of operations on the kidney, and several surgeons made the statement that the large number and severity of kidney lesions are due to the free use of meat juice, soups and gravies.

The extractives of meat are becoming a national question as concerning the etiology of groups of diseases which can be referred to meat-eating people. Watson Chalmers has graphically described the meat-eaters' zone and has shown an increase in disease peculiar to those who indulge in meat and meat extractives, but not peculiar to the people of those countries where nitrogen is obtained from vegetable proteins.

Rothberger concludes that the toxic symptoms of meat extract are due to some substance which the liver destroys (*Ztschr. f. exper. Path. u. Therap.*, 1905, i, 312-359). Pawlow observed that the ingestion of meat by an Eck-fistula dog was followed by a series of toxic symptoms.

Lieblein destroyed liver cells by injecting acid into the hepatic ducts, and toxic symptoms followed ingestion of extractives (*Arch. für exper. Path. u. Pharmakol.*, 1894, xxxiii, 318). Macleod noted a large amount of albumin in the urine of an Eck-fistula dog following addition of meat extract to the diet ("Studies in Pathology," Quarter-centenary of University of Aberdeen, 1906, p. 267). Salaskin believed ammonia to be the prime factor in causing the toxic symptoms (*Ztschr. f. physiol. Chem.*, 1898, xxv, 449). Pawlow injected sodium carbamate into the circulation of Eck-fistula dogs with negative results. Hawk repeated the injections and abandoned the theory. He fed Eck-fistula dogs with large amounts of meat extract (20-50 gm. daily for six to eight days) and obtained typical toxic symptoms which terminated fatally (*Am. Jour. Physiol.* 1908, ii, 21).

The injection of meat extract or any of the meat bases into the circulation has resulted negatively in demonstrating the presence of any special toxic body. It has been suggested that purin bodies and uric acid are derived directly from food rich in nucleins and extractives, but recent experiments have shown that these bodies can be formed synthetically from ordinary proteid. H. Trautner, after extensive research, is convinced that uric acid is the result of the activity of the colon bacillus in making reducing substances which undergo chemical changes in the blood. In 22 young rabbits he found no appreciable uric acid in the urine when no colon bacilli were present in the feces, but uric acid appeared when the animals were given colon bacilli added to their food (*Ugeskr. f. Laeg.*, Copenhagen, Sept. 23, lxxi, 1049-1070).

In my own experiments in which meat extractives or meat peptones were injected into dogs, the results were negative. Also injections of living or dead cultures of *Bacillus coli*, intravenously, subcutaneously or intraperitoneally, were negative. But when meat extracts and cultures of *Bacillus coli* were given together with food to dogs, over a definite period of time, lesions of the kidney, liver and stomach resulted and invariably death of the animal.

I have also fed meat extract to mice and rats, with the addition of cultures of *Bacillus coli*, and obtained toxic symptoms resulting in death. In these experiments, on account of increased growth of intestinal bacteria, the bacteriologic factor could not be ignored. It was plain that the meat extractives increased the numbers and activity of the intestinal bacteria. Extract-free meat was fed to animals and the bacterial content of the intestines decreased and no pathologic conditions followed (The Journal A. M. A., June 9, 1906, xlvi, 1753; *Jour. Med. Research*, xvii, No. 4; *Brit. Med. Jour.*, April 20, 1907).

The harmful effect of meat juice, therefore, must be chiefly due to the increased bacterial growth which it causes in the alimentary tract, and the symptoms which follow are more the nature of toxemia than starvation. If patients to whom meat juice would be prescribed are instead given extract-free meat, not only is the danger of extractive poisoning avoided, and of a resulting intestinal toxemia, but the concentrated protein quickly nourishes the patient.

Fenton B. Turck, Chicago.

Umbilical Hernia

To the Editor:—The report of Catchings' case of congenital umbilical hernia (abstracted in The Journal, Nov. 20, 1909, liii, 1779, from *Miss. Med. Month.*, November, 1909) recalls a case of my own. On Feb. 1, 1900, I delivered a baby boy of average size, with an umbilical tumor, larger, I think, than the one reported by Catchings. The contents of the sac were not adherent, and the various organs could be plainly seen through the translucent walls. I plainly recognized a portion of the liver, the spleen, stomach, colon and small intestines. The abdomen seemed entirely empty.

The contents were easily reduced and the cord sac tied very close to the abdomen and trimmed off, boracic acid freely applied and a thick firm pad and bandage put on. The child had no trouble and is to-day a strong healthy boy, with normal umbilicus and abdominal walls. For a while, however, the condition puzzled and worried me. It was my first and only case of that kind.

F. S. Smith, Nevada, Iowa.

Miscellany

A New Blood Test

The importance, for forensic and clinical purposes, of the detection of blood, has led to a great multiplication of blood tests. Most of the substances used for this purpose depend on the power of the blood to carry oxygen from some oxidizing substance to another substance which develops a characteristic color by oxidation. The more important substances used for this purpose in a clinical way have been guaiacum, aloin, benzidin and phenolphthalin, while the oxidizing agent used has usually been turpentine or hydrogen peroxid. A serious objection to the use of guaiac and similar substances has been the great number of substances other than blood which may produce the change in color.

In discussing this matter, J. H. Kastle[1] states: "The general consensus of opinion among those who have given this subject their attention, would seem to be, therefore, that the guaiacum test for blood and similar color reactions are valuable, especially if they lead to negative results, as proving beyond the peradventure of a doubt that blood is absent. On the other hand, if a positive test is obtained, care should be taken to exclude oxidases or peroxidases by boiling, and the salts of the heavy metals and other oxidizing agents by chemical methods, and, if possible, to subject the material under investigation to confirmative tests for blood before finally concluding that blood is present."

Kastle's investigations of the various blood tests lead him strongly to recommend the phenolphthalin test. Phenolphthalin is a product of the reduction of phenolphthalein by means of zinc and sodium hydroxid. When oxidized in alkaline solution it is converted into pheonolphthalein, which gives a red color. The test has about the same delicacy as the benzidin test. In the presence of blood and hydrogen peroxid a red color is almost immediately produced. If blood alone without an oxidizing agent is present the reaction occurs more slowly. Kastle found it possible to prepare a fairly stable colorless alkaline solution of phenolphthalin. A solution of alkaline phenolphthalin containing hydrogen peroxid was prepared which could be preserved for forty-eight hours, if kept in glass-stoppered bottles, in a dark closet at ordinary temperatures. In some cases it was found that with certain specimens of distilled water a coloration, ranging from pink to red, was produced in the reagent as soon as the hydrogen peroxid was added. The reason for this appears to be the presence of very small amounts of copper. To obviate this difficulty the water was redistilled in glass vessels.

Kastle found that the oxidation of phenolphthalin in alkaline solution by blood alone and in the presence of hydrogen peroxid, was considerably retarded by extracts of various animal tissues. The reason for this action is not known, but it may reasonably be attributed to a reducing action on the part of the tissues. At any rate, the detection of blood is markedly interfered with by the presence of certain organic substances of animal origin. Certain specimens of urine known to contain blood failed entirely to give the reaction with phenolphthalin. In no instance has a method of blood testing been devised which will recognize in urine, feces, gastric contents, etc., as small an amount of blood as can be detected in water. Various methods of removing blood from such mixtures have been tried. Thus Heller tests for blood in urine by precipitating the phosphates by alkalies which carry down the blood with them. Kastle uses for this purpose a small amount of aluminum hydroxid. To the separated sediment he applied the phenolphthalin test, and he found that, used in this way, it was very delicate.

For clinical purposes it is quite possible for a blood test to be too delicate, while many possible fallacies may be excluded by the known circumstances under which the test is applied. For forensic purposes, however, all possible fallacies must be guarded against. The phenolphthalin test has been objected to on the ground that many other substances besides blood will respond to it. Kastle finds that most of these substances can be excluded by boiling the mixture; the others present certain differences of action by which they can be easily differentiated from blood. By applying the test to unknown stains prepared by another chemist, Kastle found that he could readily detect blood with certainty. The test bids fair to be a valuable addition to our resources.

Rôle of Leucocytes in Absorption and Elimination of Medicaments.—The facts which have been gathered by a considerable number of observers regarding the action of leucocytes in the absorption of medicines are collected in a very interesting article by Arnozan and J. Carles (*Revue de Therapeutique Medicochirurgicale*, Aug. 15, 1909; *Journal suisse de Chimie et pharmacie*, Aug. 28, Sept. 4 and Sept. 11, 1909). Besredka has shown that the leucocytes absorb by phagocytosis the insoluble granules of arsenic trisulphid, thereby delaying the death of animals fatally poisoned and assisting in the recovery of others if the dose is not too large. Landerer has shown that leucocytes take up the balsam of Peru injected in a state of fine subdivision, and Arnozan and Montel have made similar observations with reference to iodoform and calomel. Oils and milk and medicated fat, such as mercurial ointment, are similarly affected, according to J. Carles. Soluble salts may be absorbed in the same way. Thus salts of iron, silver, mercury, sodium salicylate, atropin, lecithin, etc., are taken up by the leucocytes and unevenly distributed throughout the body. The leucocytes do not always show the same tendency to absorption toward all medicines, and their activity may differ in different species of animals. The medicaments absorbed by the leucocytes may undergo various changes; they may be transformed within the leucocytes by the action of various ferments which these cells contain. They may be carried to the various tissues and may be eliminated by the various excretory organs. One point of great interest is the tendency to elimination at the seat of injury where the leucocytes collect according to the great chemotactic laws. By this means the accumulation of a medicine in an unusual concentration at the seat of a pathologic process may determine either remedial processes, or if the dose be too large, aggravation of the disease may occur. The fate of the leucocytes which absorb the various remedies is various. They may act simply as carriers or they may become temporary depots of the foreign substances, or lastly, they may emigrate with their charge of toxic material, passing into the intestines and becoming lost. The therapeutic suggestions based on these investigations are both interesting and important. The action of the leucocytes would make untenable the prevalent doctrine that medicines absorbed into the system are equally distributed throughout the tissues. It would seem probable that, on the other hand, the distribution may be very unequal. It is of especial interest to note that the tendency of leucocytes to collect about an inflammatory focus or other lesion allows of an efficient curative action by a small amount of medicament without an injurious effect on the system in general. For local affections remedies should be preferred which will be taken up by the leucocytes; on the other hand, general infections, toxemias, etc., may escape the action of remedies, because the toxins or bacterial agents producing the disease float free in the blood stream, while the drug which should neutralize or destroy them is locked up in the leucocytes. Another idea springing from this conception is that the leucocytes may take up food substances and become incapable of absorbing medicaments, or may have become so saturated with drugs that they lose their phagocytic power. Metastases and the action of derivatives may be explained by supposing that leucocytes carry toxins from one point to another.

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[1] Bull. 51, Hyg. Lab., U. S. P. H. and M.-H. S., Washington, D. C.

The Electric Forces of Mitosis and the Origin of Cancer.—"Although exception may be taken to any conclusions which are drawn from purely statistical data, yet it would appear that the evidence so arrived at is overwhelmingly in support of the fact that one of the major predisposing causes of cancer is to be found in close inbreeding. Moreover, it would also appear from a detailed comparison of the organs attacked, that those organs which are subjected to stresses and irritations are most liable to develop malignant growth. Both of these conclusions are in close agreement with the theory of electrocytology." Thus are characterized the main factors in an etiologic consideration of cancer in an elaborate paper by A. E. and A. C. Jessup, E. C. C. Baly, F. W. Goodbody and E. Prideaux (*Bio-chem. Jour.*, July, 1909, iv. 191). By these observers normal somatic cell division is explained as the result of well-balanced electric forces which have their origin in electrically charged cellular colloids. When this balance is sufficiently disturbed by external influences, continuous atypical cell division is the rule and a pertinent predisposing cause of cancer is established. The phenomenon of sex production is attributed to these residual colloid charges, and all the phenomena of parthenogenesis, artificial fertilization, pathologic mitoses and sterilization by *x*-rays are explained by the same theory. The daughter cells of the pseudo-reducing pathologic mitosis possess renewed activity. They possess potential probability of conjugation with leucocytes and normal tissue cells. To these latter, together with the stimulation of the surrounding tissue cells by the degradation products of cancer cell metabolism, is attributed the formation of a neoplasm with power of continuous growth. The susceptibility of the cell to derangement is increased with decreasing vitality, such as occurs with age, and as a result of inbreeding. The rate of proliferation depends on the activity of the cytoplasm; the greater the activity the more rapid the growth, while the more highly differentiated the cell and the older it is the less rapid the rate of proliferation. As a concise summary: age incidence, local origin, infiltration, metastases, transmission with all its limitations, and power of continuous growth are the natural outcome of abnormal cell proliferation induced by a disturbance of the electrostatic forces present in normal mitosis.

Glycogen in the Hypophysis and the Central Nervous System.—From a microscopic study of human, sheep and calves' hypophyses, stained with specific stains, W. Neubert (*Beitr. z. path. Anat. u. z. allg. Path.* 1909, xlv, 38) finds that glycogen occurs normally in the hypophysis. It is constantly found in the epithelium of the colloid cysts lying in the boundary zone between the anterior and posterior lobes, in the cysts themselves where a desquamation of epithelium has taken place, and in the colloid which results from this desquamation and transfusion. It is also found in the so-called nervous portion of the hypophysis, both within the glia cells and within the intercellular tissue of the posterior lobe. This latter occurrence of glycogen is indicative of the origin of the corpora arenacea and the corpora amylacea of the hypophysis. In pathologic conditions, as, for example, in diabetes, the percentage of glycogen is markedly increased and glycogen is then found in the parenchymal cells of the anterior, glandular lobe. Likewise, in diabetic subjects, glycogen is found in appreciable quantities in the brain, spinal cord and in the heart muscle, particularly in the lymph spaces, even though the blood contains only extremely small quantities. The occurrence of glycogen in the cystic epithelium and in the nervous portion of the hypophysis, Neubert thinks, is an expression of the embryonal nature of these tissues, of a primitive type of metabolism of the embryonal-like cells and the absence of any high degree of specialized functional activity. Glycogen formation in the liver is a product of a well-differentiated organ adapted to supply a simple primitive food for the nourishment of all the organs. Glycogen formation in any other organ, which is usually at the organ's own expense, represents a reversion from a highly specialized toward an embryonal state in an attempt to make good a deficient food-supply. This is especially true in diabetes.

The Effect of Autocondensation in Diabetes Mellitus.—Dr. F. deKraft, New York, at the recent meeting of the American Electro-Therapeutic Association, after citing 3 cases in detail, made the following deductions: Sugar and other products of impaired metabolism circulating in the blood in greatly increased amount act as irritants to the walls of the arteries, bringing about a form of arteriosclerosis closely resembling the senile form. High-frequency currents, applied preferably by autocondensation, or by the effleuve to insulated patient with grounded metal to back, regulate the circulation when it is unbalanced through profound influence on the sympathetic nervous system, improve the tone of the arterial wall, lower blood pressure, check the formation of toxins and strengthen the natural defenses of the body. They have a marked stimulating action on cell life and on the nutrition of cells at the farthest point. They increase the reducing power of hemoglobin, thus increasing oxidation in the tissues. Greater activity occurs in the kidneys and other glands, and there appears for a time more sugar in the urine, continuing until such time as the glycogenic balance in the liver cells and muscles is restored, after which, under continued treatment, the amount of sugar excreted steadily diminishes, and in favorable cases entirely disappears. In 5 cases of diabetes with marked constitutional symptoms in which the sugar excretion had been between 7 and 9 per cent., the urine has remained free from sugar for many months, and in all patients treated there has been marked improvement in general health.

Salt-Free Diet in Hyperchlorhydria.—Enriquez and Ambard report recent research which confirms their previous assertions in regard to the benefit from withdrawal of salt when the secretion of gastric juice is excessive and the stomach responds with pain. A salt-free diet has a prompt and marked influence on the excessive secretion; the influence on the pains is not felt so soon. Once established, the effect is durable, the pain subsiding permanently and completely in two or three weeks or at most in five weeks. As soon as the pain has been banished by a strictly salt-free diet, the patient is allowed to have his own salt-cellar to use as desired, the food still prepared without salt. This gives the patient a feeling of freedom which renders the restrictions less irksome, and as the capacity of the salt cellar is known, the exact amount he is taking can be estimated. The patient is also given the liberty to eat the ordinary food when dining out, or at certain intervals. The salt-free diet should be instituted in every case of hyperchlorhydria rebellious to other measures. The vanishing of the pains after withdrawal of salt may also turn the scale in favor of a benign gastric affection in certain dubious cases. The article from which the above is taken appeared in the *Revue de Médecine Interne et de Thérapeutique*, October, 1909.

The Development of the Parasite of Oriental Sore in Cultures.—The parasite causing Oriental sore was first described accurately by Wright and named by him *Helcosoma tropicum.* On account of their obvious affinity with the Leishman-Donovan bodies of kala-azar, Wright's bodies have been referred by subsequent writers to the previously established genus *Leishmania* (Ross), and they now stand as *Leishmania tropica*, the only other known species of the genus being *L. donovani*, the parasite of kala-azar. The Wright bodies were first grown by R. Row (*Quart. Jour. Microsc. Sc.* 1909, liii, 747), who gives the cultural characteristics, a description of the fresh parasite when just taken from the sore, when grown on artificial media and when stained in Giemsa's stain. It was found not to grow in a sterile citrate solution (2 per cent.)—thus differing from the Leishman-Donovan bodies—but did grow well on human blood-serum. "The cultural result is very similar to that obtained for the Leishman-Donovan body. It is of some interest, however, that the method of cultivation required appears to be quite different in the two cases, a fact which indicates that the transmission and mode of development are different in the two parasites." "In smears from the juice of the sore stained in Giemsa's stain the parasites are seen in all sorts of shapes —pear-shaped, oval, torpedo-shaped and even spherical. They are found free outside the corpuscles and also in the large macrophages." In cultures after forty-eight hours the parasite in length is two and one-half to three times the diameter of a red-blood cell and about three times as long as broad. The shape is like a banana; "the contour of the body is well defined, the sides being parallel and the ends rounded"; the anterior extremity bears the micronucleus and the parasite has no power of movement. "At seventy-two hours the development is complete" and the flagellum has formed, which is "one and a half times or twice the length of the body of the parasite, and has from six to eight symmetrical undulations." Once the flagellum is formed, the individual is liberated and is free to swim away from the colony. "In life the flagellum is very active and moves very rapidly with a lashing, wave-like, not a corkscrew-like, movement; in appearance it strongly resembles a spirochete."

The Nerves of the Atrioventricular Bundle.—The location, physiology and microscopic structure of the atrioventricular bundle (the bundle of His), with particular reference to its nerve constituents, are considered by J. Gordon Wilson in a paper (*Proc. Roy. Soc.*, 1909, lxxxi, 151) reporting some of the results of his researches on this bundle. In his historical sketch of our knowledge of the bundle special reference is made to the work of Tawara, who claims that the atrioventricular bundle has a uniform arrangement in all mammals (including man), and the outspreading of the bundle into the atrial and ventricular musculature, respectively, consists of Purkinje fibers or their equivalents. This uniting system is early developed in the embryo. From this time on, leaving growth out of consideration, it remains unchanged during life. It is not affected by hypertrophic and atrophic processes in the heart in the same way as the ordinary cardiac muscle. Wilson finds that "anatomically the atrioventricular bundle contains not only a special form of muscle fiber distinct from the ordinary muscle of the atrium or the ventricle, but it is an important and intricate nerve pathway" in which are found numerous ganglion cells—monopolar, bipolar and multipolar. Abundant nerve fibers run through it in strands and there is an intricate plexus of varicose fibrils around and in close relation to its muscle fibers, also the abundant vascular system well supplied with vasomotor nerves. "Physiologically it has been shown that the atrioventricular band constitutes the pathway which assures the *communication of the atrioventricular rhythm*. When the bundle is sectioned or crushed the ventricles cease momentarily to beat, though they soon regain pulsation, but with a rhythm more slow than that of the atrium. Pathologic anatomy supports this view; the allorhythmia or Stokes-Adams disease can be explained satisfactorily by lesions involving this pathway." It has been very generally held that, this pathway being muscular, the conducting mechanism between the atrium and ventricle must be myogenic. The findings of Wilson are opposed to this hypothesis. "In these experiments and pathologic conditions an important nerve pathway is equally involved with the muscle bundle. Considering the neurogenic as opposed to the myogenic hypothesis from the anatomic standpoint, one must acknowledge that the very complex nerve constituents of the bundle are very suggestive of an intricate nerve mechanism." Finally Wilson discusses the possibility of the atrioventricular bundle being a neuromuscular spindle. The presence of ganglion cells and the absence of those anatomic and neurologic constituents characteristic of the muscle spindle are opposed to a neuromuscular hypothesis.

Uniform Statistics for Puerperal Fever.—P. Rissmann of Osnabrück suggests as a uniform basis for statistics in regard to puerperal fever that the record should include (1) brief record of the birth, date of entry, internal examination, injuries, and operation, if any; (2) temperature above 38.5 C., and date of first fever; (3) pulse over 100; (4) length of stay in the institution; (5) death and autopsy findings, or (6) discharged free from disturbances; or complications, if any; (7) remarks, existing or intercurrent affections, and (8) final outcome; later examination. He gives a specimen chart for the purpose in his communication on the subject in the *Gynaekologische Rundschau*, 1909, iii, 740.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

INJECTIONS OF ALCOHOL FOR FACIAL NEURALGIA

To the Editor:—Please refer me to information regarding the injection of alcohol for relief of facial neuralgia.

F. W. WILCOX, St. Petersburg, Fla.

ANSWER.—The following articles which have appeared in THE JOURNAL will give a fairly complete idea of the subject:

Patrick, H. T.: "Treatment of Trifacial Neuralgia by Means of Deep Injections of Alcohol," Nov. 9, 1907, xlix, 1567.

Patrick, H. T.: Same subject, report of seventy-five cases treated, Dec. 11, 1909 (this issue), liii, 1987.

Hecht, D.: "Methods and Technic of Deep Alcohol Injections for Trifacial Neuralgia," Nov. 9, 1907, xlix, 1574.

"K" PACKAGE

To the Editor:—Please give the contents of the "K" package spoken of in the abstract of Raymond's article in THE JOURNAL, Nov. 20, 1907, liii, 1768.

C. O. HENRY, M.D., Fairmont, W. Va.

ANSWER.—The "K" package originally issued to soldiers at Columbus Barracks for the prevention of venereal disease, contained 2 c.c. of a solution of protargol, 20 parts, glycerin, 20 parts, and distilled water, 60 parts, and a medicine dropper, instructions being given to the soldier to inject this solution immediately after illicit connection. The package now in use contains 4 c.c. of a 25 per cent. solution of argyrol, 4 c.c. of a 30 per cent. calomel ointment, and a medicine dropper.

COLONIES FOR EPILEPTICS

To the Editor:—In what states are there colonies for epileptics?

W. O. BELL, M.D., Seattle, Wash.

ANSWER.—Following are some of the state colonies:

Craig Colony for Epileptics, Sonyea, N. Y.

Hospital Cottages for Children, Baldwinsville, Mass. Hartstein Wendell Page, Medical Superintendent.

New Jersey State Village for Epileptics, Skillman, N. J. David Fairchild Weeks, Medical Superintendent.

Indiana Village for Epileptics, New Castle, Ind. W. C. Van Nuys, Medical Superintendent.

North Carolina has recently opened an epileptic colony in connection with one of her state hospitals for the insane. There are also state institutions of various kinds for the care of epileptics in Ohio, Texas, Pennsylvania, Kansas, Michigan and Minnesota, besides a number of semi-private institutions scattered throughout the country.

THE NEGRI BODIES

To the Editor:—Please tell me where I can find Negri's original article (1903) on the Negri bodies in diagnosis of rabies? E. B.

ANSWER.—Negri published his discovery in the *Zeitschrift für Hygiene und Infectionskrankheit*, xliii, No. 3. An editorial on this subject in THE JOURNAL, Oct. 29, 1904, xliii, 1311, gives a brief account of the technic of investigation and character of *these* bodies. Another article by Negri appears in the periodical first mentioned, xliv, No. 3. These papers may be borrowed from the Surgeon-General's Library at Washington.

The Public Service

Medical Department of the Army

Changes for the week ended Dec. 4, 1909:

Brown, Orville G., capt, granted an extension of 10 days to his leave of absence.

Wales, Philip G., major, relieved from duty at Fort Apache, Ariz., and ordered to the Presido of Monterey, Cal., for duty.

Smith, Allen M., major, relieved from duty at the Presidio of Monterey, Cal., and ordered to Fort Sam Houston, Tex., for duty.

Raymond, Henry I., lieut. col., relieved from duty at Fort Sam Houston, Tex., and ordered to St. Paul, Minn., for duty as chief surgeon, Department of Dakota.

Maus, Louis M., col., relieved from duty as chief surgeon, Department of Dakota, and ordered to Chicago, for duty as chief surgeon, Department of the Lakes.

Byrne, Charles B., col., relieved from duty as chief surgeon, Department of the East; will proceed home at the expiration of his present leave of absence and await retirement from active service.

Blanchard, Robert M., capt., granted sick leave of absence for 2 months.

Ferguson, James B., 1st lieut., M. R. C., granted leave of absence for 4 months.

Barney, Frederick M., 1st lieut., M. R. C., granted leave of absence for 1 month.

Bowman, Madison H., 1st lieut., M. R. C., ordered to Seattle, for temporary duty on the transport *Dix*.

Medical Corps of the Navy

Changes for the week ended Dec. 4, 1909:

Dickson, S. H., medical director, commissioned Medical Director from Oct. 31, 1909.

Fitts, H. B., medical inspector, commissioned Medical Inspector from Oct. 3, 1909.

Jones, E. L., P. A. surgeon, commissioned P. A. Surgeon from Jan. 6, 1909.

Ames, M. H., P. A. surgeon, commissioned P. A. Surgeon from March 24, 1909.

Allen, A. H., P. A. surgeon, commissioned P. A. Surgeon from May 2, 1909.

Furlong, F. M., surgeon, detached from the *Vermont* and ordered home and granted sick leave for 3 months.

Williams, R. B., surgeon, detached from the Navy Yard, Philadelphia, and ordered to duty in connection with the *South Carolina*, and to duty on that vessel when placed in commission.

Grunwell, A. G., surgeon, detached from the *Kansas* and ordered to treatment at the Naval Medical School Hospital, Washington, D. C.

Minter, J. M., asst-surgeon, detached from the Naval Hospital, Norfolk, Va., and ordered to the *Prairie*.

Foster, T. G., asst.-surgeon, ordered to the *Prairie*.

Wheeler, W. M., surgeon, detached from the Navy Yard, New York, N. Y., and ordered to the *Panther*.

Pleadwell, F. L., surgeon, detached from duty as a member of the Naval Examining and Medical Examining Boards, Washington, D. C., and to duty as assistant to the Bureau of Medicine and Surgery.

Shiffert, H. O., surgeon, detached from the *Lancaster* and ordered to the *Vermont*.

Braisted, W. C., surgeon, detached from duty as assistant to the Bureau of Medicine and Surgery and ordered to special temporary duty in the Bureau of Medicine and Surgery.

Hull, H. F., P. A. surgeon, ordered to the Navy Yard, New York.

Association News

NEW MEMBERS

List of new members of the American Medical Association for the month of November, 1909.

ALABAMA

Anderson, E. C., Amiston.
Bell, A. W., Woodlawn.
Caffee, S. R., Avondale.
Collins, J. A., Birmingham.
Constantine, K. W., Birmingham.
Copeland, W. P., Eufaula.
Dowman, C. E., Jr., Birmingham.
Edmondson, J. H., Birmingham.
Levi, I. P., Anniston.
Mann, S. H., Ensley.
May, E. E., Birmingham.
McGehee, W. W., Montgomery.
Moon, E. K., Birmingham.

ARIZONA

Kennedy, R. D., Globe.

CALIFORNIA

Cerf, A. E., San Francisco.
McClelland, J. L., Los Banos.
Reed, J. R., Pasadena.
Wright, T. B., Pasadena.

COLORADO

Farnsworth, J. A., Fort Morgan.
Harvey, Asa, Forbes Junction.
Roberts, Wm., Denver.
Thompson, Virgil, Hotchkiss.

FLORIDA

Lartigue, Etienne, Gainesville.
Lowry, C. S., Jacksonville.
Thompson, T. C., Jacksonville.

GEORGIA

Cone, R. L., Groveland.
Dancy, W. R., Savannah.
Darby, J. I., Columbus.
Dorsey, R. T., Atlanta.
Fox, R. L., Brunswick.
Hilsman, P. L., Albany.
Moncrieff, J. T., Columbus.
Ridley, C. L., Hillsboro.
Russell, E. A., Fitzgerald.
Willis, C. H., Barnesville.

IDAHO

Boeck, L. W., Boise.

ILLINOIS

Anderson, A. L., Aurora.
Atchison, A. B., Rockford.
Best, C. L., Freeport.
Bohan, J. M., Galesburg.
Bothwell, R. S., Batavia.
Campbell, R. L., E. St. Louis.
Clement, C. C., Chicago.
Everett, J. M., DeKalb.
Fouser, G. G., Chicago.
Frazier, F. R., Yorkville.
Gill, G. P., Rockford.
Goembel, E. W., Rockford.
Gordon, E. E., Cairo.
Hanford, F. W., Rockford.
Harney, L. G., E. St. Louis.
Helm, W. E., Chicago.
Hinton, R. T., Jacksonville.
Iseman, L. L., Chicago.
Keith, D. M., Rockford.
Krueger, A. H. R., Carpentersville.
Kulis, Jacob, Chicago.
Olkon, D. M., Chicago.
Olson, F. A., Chicago.
Scott, L. O., Rockford.
Seibert, H. H., Chicago.
Streuter, A. F., Arenzville.
Tyrrell, G. M., Scales Mound.
Maas, Elizabeth C., Rockford.
Mitchell, J. W., Harrisburg.
Wach, Frederick, Dover.
Winn, G. L., Rockford.
Woodward, W. P., Cherry Valley.

INDIANA

Church, L. O., Fritchton.
Folsom, E. M., Boonville.
Hume, J. R., Milroy.
Koons, H. H., New Castle.
McBride, J. L., Zanesville.
Rogers, Clarke, Logansport.
Schriefer, E. E., Ferdinand.
Swan, D. H., Francisco.
Wallace, L. S., Bunker Hill.
Wilson, Ralph, Shirley.

IOWA

Caldwell, E. J., West Chester.
Crawford, D. A., Guthrie Center.
Emmert, D. F., Avoca.
Gray, Clara, Keota.
Hay, G. W., Washington.
Marugg, A. L., Durango.
Newland, E. R., Drakeville.
Stevenson, A. P., Cincinnati.
Trueblood, W. A., Ottumwa.

KANSAS

Beasley, J. N., Topeka.
Campbell, Farquhard, Kansas City.
Edington, J. L., Marysville.
Matteson, G. W., Herington.
Mitchell, M. R., Topeka.
Purves, G. K., Wichita.

KENTUCKY

Foster, A. C., Owensboro.
Harrison, L. W., Alcorn.
Hurst, Taylor, Jackson.
Yates, J. C., Fulton.

LOUISIANA

Cocram, H. S., New Orleans.

MAINE

Roy, L. O., Augusta.

MARYLAND

Barkdall, F. L., Cumberland.
Girdwood, John, Baltimore.
Wertz, I. M., Hagerstown.

MASSACHUSETTS

Birnie, J. M., Springfield.
George, F. W., Worcester.
Hancock, A. W., Lawrence.
McIntyre, David, Boston.
Newton, R. S., Westboro.

MICHIGAN

Aldrich, A. D., Winona.
Fair, R. C., Durand.
Farnham, L. A., Calumet.
Kugler, J. C., Jackson.
McBride, G. L., Grand Rapids.
McLarty, A. A., Manistee.
Palmer, E. N., Brooklyn.
Ramsdell, L. S., Manistee.
Squiers, D. E., Dowagiac.
Williams, A. R., Jackson.

MINNESOTA

Burns, F. W., Stewartville.
Comstock, A. E., St. Paul.
Kelley, E. S., Minneapolis.
Knight, H. L., Minneapolis.
Winnick, J. B., St. Paul.

MISSISSIPPI

Holman, C. H., Heminway.
Mercer, R. L., Shelby.
Walley, D. W., Richton.

MISSOURI

Boswell, A. C., Kansas City.
Bounds, E. H., Hannibal.
Horigan, J. A., Kansas City.
McLemore, Tipton, St. Louis.
Traubitz, Arnold, Neelyville.

MONTANA

Gerhart, E. A., Billings.

NEBRASKA

Tobias, J. M., Mitchell.

NEVADA

Carpenter, F. E., Yerington.

NEW JERSEY

Eaton, A. R., Jr., Elizabeth.
Frank, Myrtile, Egg Harbor.

NEW YORK

Barber, C. R., Rochester.
Bell, A. M., Saranac Lake.
Brink, C. G., New York City.
DeVoe, B. K., Albany.
Eastman, F. C., Brooklyn.
Gardiner, S. H., Brooklyn.
Gross, Norris, New York City.
Lyon, I. P., Buffalo.
Markoe, J. W., New York City.
Todd, Leona E., Auburn.
Tuttle, F. E., Cattaraugus.
Wood, E. L., Dansville.
Woodbury, M. S., Clifton Springs.

NORTH CAROLINA

McBrayer, T. E., Shelley.
McGougan, J. Vance, Fayetteville.

NORTH DAKOTA

Bunting, F. E., Mandan.

OHIO

Crosby, C. C., Ashtabula.
Hamilton, C. H., Sugar Grove.
Hartzell, H. J., Cleveland.
Kimmel, E. E., Dayton.
Lucas, W. H., Cleveland.
Pan, Oscar, Cleveland.
Reich, Leo, Cleveland.
Riegel, H. C., Lightsville.
Rumbaugh, D. W., Chicago.

OKLAHOMA

Blake, E. W., Talaquan.
Blender, Henry, O'Keene.
Stafford, G. A., Kiefer.
Williams, C. W., Oklahoma City.

PENNSYLVANIA

Campbell, W. M., McKees Rocks.
Devor, J. H., Chambersburg.
McGuire, H. E., Pittsburg.
Page, C. W., Bradford.
Raub, R. S., Easton.
Stevenson, E. W., Pittsburg.

RHODE ISLAND

Bailey, G. M., Providence.
Taggart, F. G., E. Greenwich.

SOUTH CAROLINA

Woodruff, W. A., Cateechee.

SOUTH DAKOTA

Brandt, F. A., Sturgis.
Keller, W. F., Sioux Falls.

TENNESSEE

Brown, C. W., Nashville.
Hix, J. B., Whitleyville.
Joyner, W. H., Persia.
Reisman, E. E., Chattanooga.

TEXAS

Arnold, E. M., Houston.
Cole, W. A., Normangee.
Coopwood, T. B., Lockhart.

VIRGINIA

George, Sumter, Danville.
Hopkins, Frank, Hot Springs.
Iden, B. F., Manasses.
Peters, W. B., Appalachia.
Powell, W. L., Roanoke.
Runyon, Emily C., Richmond.
Tuder, T. J., Critz.

WASHINGTON

Klemptner, L. H., Seattle.
Saxe, Cora T., Seattle.

WEST VIRGINIA

Cook, T. G., Academy.
Cantle, H. C., Austen.
Haskins, T. M., Wheeling.

WISCONSIN

Bennett, L. J., Fort Atkinson.
Bird, H. R., Madison.
Delaney, H. O., Beloit.
Edwards, W. A., La Crosse.
Elson, J. C., Madison.
Fuller, G. H., Madison.
Parker, A. S., Clinton.
Waufle, G. C., Janesville.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Public Health Campaign in Boston

Mr. E. W. McSweeney of Boston has made a report to Hon. George A. Hibbard, the mayor of Boston, on the question of public health, which appears in the October *Annals of Medical Practice*. After stating that it is undeniable that the health of a community is its best asset and that the campaign against tuberculosis is only one part of the problem, Mr. McSweeney discusses the progress that has been made in antituberculosis work since 1906 and recommends that the governor of Massachusetts and the mayor of Boston join in the appointment of a commission to consider the relations which should exist between the state and the city and to agree on a plan of action which will centralize action, reduce expense and increase results, which will aim at something and get somewhere. He furthermore states that, in his opinion, if a basis of cooperation between the state and the various cities and towns cannot be found, it will be much better for the state to take over the entire control of the consumptive problem and to relieve Boston altogether, rather than to continue the present unbusiness-like methods of work.

Mr. McSweeney's second recommendation is that, following the formulation of a general plan of government, the entire reorganization of the Boston health board will be necessary. He states that for more than a decade this body has been steadily losing ground and that it must be reorganized under a single head, no matter who the man is or whatever may be the cost. Especially interesting is his comment that it is no excuse for Boston to point out that it has only followed the bad example of the United States Government "which cares for health and quarantine matters through the Public Health and Marine-Hospital Service, vital statistics through the Bureau of the Census, pure food through the Department of Agriculture, etc."

Mr. McSweeney therefore recommends that the mayor of Boston address a letter to the president of the United States setting forth that, as the health of the city is the most vital concern of the nation, Boston desires to get in line with the most modern scientific progress in this regard and therefore asks for the loan of a competent physician now in the government service to act as medical adviser to the mayor for a period of two or three years. In this connection he mentions four physicians, officers of the United States Public Health and Marine-Hospital Service, whose work in the last few years has been noteworthy and conspicuous.

Taking up the question of the preservation of the child, he recommends that the school committee be relieved absolutely from responsibility for the medical treatment of the children in the schools, as the problem of tuberculosis and other diseases in the public schools is a health problem and not a school question. He states that the best plan which he has found is that adopted by the London county council, which is about to utilize existing hospitals and institutions for the medical treatment of children, giving financial help if necessary and carefully avoiding pauperizing the pupils. The plan proposes that while children suffering from a specific disease must be cared for, the parent shall have the first opportunity to care for them through the family physician and that when this is not possible the children shall be cared for in the hospitals and clinics established, the cost to be charged to the parent of the child treated unless they are unable to pay, in which case the cost is to be paid out of the city treasury.

The Middleman in Medicine

The secretary of state of New York recently refused to file a certificate of incorporation of a Brooklyn concern organized to supply medical treatment and burial service to its members. The position taken by the secretary of state is important in view of the organization in various parts of the country of so-called "Burial and Aid Societies," which offer policies for a small weekly payment binding the company to furnish free medical and surgical service in case of illness, in many cases free medicines and surgical appliances, as well as funeral expenses in case of death.

The secretary of state has ruled that a corporation cannot practice medicine in New York. The company did not propose to practice medicine and surgery itself, but intended to make contracts with physicians to treat the policy-holders of the company at a nominal rate. The New York courts have decided that a corporation cannot practice law and this decision has operated to the extent of prohibiting a certain company in New York City from supplying its patrons with legal services, a scheme which, it is stated, it had worked up into an established and profitable business. By the same line of reasoning, the purpose of the proposed corporation in New York was simply to act as an agent or a middleman between the policy-holder or patrons on the one side and the physicians and undertakers on the other, the profits of the company to be found in the difference between the amount paid it by the policy-holder and the amount paid out to the doctor or undertaker for services.

This form of contract practice, as brought out in a previous discussion on this subject in The Journal (Dec. 14, 1907), is thoroughly reprehensible, since it amounts practically to buying the services of the physician at wholesale and selling them at retail, the middleman in the form of the exploiting company taking the profit. As was previously pointed out, this form of practice should be condemned, not necessarily because a contract exists for the rendering of services but because the arrangement made is economically unjust and is calculated to work injury to the physician, the patient and the public.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Fourth Month—Third Weekly Meeting

Pelvic Cellulitis

Pathology: Modes of extension of infection to cellular tissue. Lymphangitis, phlebitis, perilymphangitis and periphlebitis. Terminations, resolution, chronic cellulitis, suppuration. Involvement of adjacent viscera. Relation of cellulitis and tubal inflammation.

Diagnosis: General symptoms. Location, form, relations, mobility, consistence of inflammatory exudate. Differentiate from pelvic peritonitis, pyosalpinx, pelvic hematocele, appendicitis, psoas abscess.

Salpingitis

Etiology: Abortion, labor, instrumentation, adjacent infections, menstrual congestion, acute exanthemata, distorted tube, etc. Micro-organisms.

Classifications (a) Catarrhal, salpingitis serosa, resulting in sactosalpinx serosa—hydrosalpinx; (b) purulent, salpingitis purulenta, resulting in sactosalpinx purulenta—pyosalpinx; (c) hemorrhage leads to sactosalpinx hemorrhagica—hematosalpinx.

Symptoms and Diagnosis: (a) Gonorrheal, (b) puerperal, (c) tubercular salpingitis.

Ovaritis

Acute and Chronic: Pathology of each. Symptoms and physical signs.

Pelvic Peritonitis

(a) Exudative, (b) adhesive, (c) tubercular, (d) *pachyperitonitis; etiology and pathology of each.* Differentiate pelvic peritonitis from pelvic cellulitis, salpingitis, ovaritis.

Society Proceedings

COMING MEETINGS

American Physiological Society, Washington, D. C., December 28-30.
Medical Society of State of New York, Albany, January 25.
Southern Surg. & Gynecological Assn., Hot Springs, Va., Dec. 14-16.
Western Surgical and Gynecological Assn., Omaha, December 20-21.

AMERICAN ACADEMY OF MEDICINE

Third Mid-Year Meeting, held at New Haven, Conn., Nov. 11-12, 1909

CONFERENCE ON PREVENTION OF INFANT MORTALITY

As a result of the conference arranged by the American Academy of Medicine on prevention of infant mortality, the American Association for Study and Prevention of Infant Mortality was organized at a special meeting called at the close of the conference and held November 13 in Lampson Hall, Yale University. Dr. F. H. Gerrish of Portland, Me., presided, and Dr. Charles McIntire, Easton, Pa., acted as secretary. A constitution and by-laws were adopted and officers elected. These were noted in The Journal, November 20, p. 1751. It was decided that the board of directors should number at least thirty members. The complete number was not appointed, the directorate being authorized to elect additional members at a later meeting. Those appointed included Dr. H. Merriman Steele, Yale Medical School; Dr. Charles Richmond Henderson, professor of sociology of the University of Chicago; Dr. F. H. Gerrish, Portland, Me.; Dr. J. Morton Howell, health officer, Dayton, Ohio; Dr. John M. Connolly, Boston; Dr. H. J. Gerstenberger, Cleveland; Prof. Isabel Bevier, University of Illinois; Dr. W. H. Carmalt, Yale Medical School; Dr. Thomas Morgan Rotch, Harvard Medical School; Prof. Irving Fisher, Yale University, president of the Committee of One Hundred on National Health of the American Association for the Advancement of Science; Dr. Caroline Hedger, of the United Charities, Chicago; Dr. Lilian Welsh, Baltimore; Dr. J. F. Edwards, department of health, Pittsburg, Pa.; Dr. Richard A. Urquhart, Johns Hopkins Medical School, Baltimore; Dr. Charles P. Putnam, Boston; Dr. Thomas Darlington, health commissioner of New York City; and Dr. W. A. Evans, health commissioner of Chicago. Baltimore was selected as the next meeting place of the society. The meeting will be held in the autumn of 1910. Dr. Charles Richmond Henderson of the University of Chicago was nominated president for 1910-1911.

Resolutions Adopted

The task of preventing infant mortality is second to none in importance and should engage the best attention and effort of all individuals, lay and professional, and of every commonwealth and community. As looking toward this., the Academy records its convictions in the following resolutions:

First. *Resolved:* That the present high rate of infant mortality is due to inherited debility or disease, improper environment and care, improper feeding and communicable diseases, and is to a high degree preventable.

Second. *Resolved:* That the breast feeding of infants is, when possible, the only proper method and that artificial feeding should never be substituted as a matter of choice.

Third. *Resolved:* That the reporting of all communicable diseases, especially of those commonest in society, to health boards, should be compulsory.

Fourth. *Resolved:* That the scientific instruction of the young in practical hygiene and sanitation, and of mothers in the care and rearing of infants is an important duty resting chiefly on physicians, sociologists, school authorities and boards of health.

The conference was opened by a brief address of greeting by President Hadley of Yale University. The response was made by Dr. W. Blair Stewart of Atlantic City. There were four sessions. The first, devoted to the medical prevention of infant mortality, was presided over by Dr. J. H. Mason Knox, Jr., Baltimore, and Dr. Richard A. Urquhart, Baltimore, was secretary. The second session was on the philanthropic prevention of infant mortality and Dr. Edward T. Devine, general secretary of the Charity Organization of New York City, and editor of the *Survey*, was chairman, and Miss Lilian Brandt of New York was secretary. Institutional prevention of infant mortality was considered at the third session, which was presided over by Mr. Homer Folks of New York, secretary of the New York State Charities Aid Association, with Miss Mary Vida Clark as secretary. Educational prevention of infant mortality was the subject of the last session, the chairman of which was Prof. C. E. A. Winslow, biologist in chief of the laboratory of sanitary research of the Massachusetts Institute of Technology.

Relation of Alcoholism to Infant Mortality

Dr. J. H. Mason Knox, Jr., Baltimore: The importance of united effort to curtail the long prevailing infant mortality is at last being generally recognized. Physicians should be in the van of this movement because they as a class understand most thoroughly the factors bringing about this large death rate among infants, and know how it can be much diminished. Public sentiment must be aroused to insist on suitable hygienic surroundings, adequate care and proper diet for every new-born babe. The minimum of these requirements must be pointed out by physicians. No field in medicine is more enticing. The potential energy of an infant saved from death by proper medical care and nursing supervision cannot possibly be reckoned. The future of these little lives cannot be foretold as can the lives of adults saved from disease. It behooves us then as physicians to investigate thoroughly all sources of this appalling death rate and to make them known to the public, at the same time suggesting remedies. Among the factors directly and indirectly destructive to the life of infants in this country and in most civilized countries is acute and chronic alcoholism in the parents. The injurious effect of alcohol on the infant is threefold: First, the mother's tissues, nervous system and other organs may be so weakened by taking alcohol as to lower her vitality greatly. Second, the germinal cells of both parents may be more or less injured by the ingestion of large amounts of alcohol. Third, alcohol imbibed in large quantities by the pregnant mother may affect the vitality of the fetus. The disastrous effect of chronic alcoholism on the home and so indirectly on the infant life needs little emphasis in this section.

DISCUSSION

Dr. Thomas Morgan Rotch, Boston: It is well in any consideration of the subject to remember that alcohol is a drug and as such has an important use.

The Relation of Tuberculosis to Infant Mortality

Dr. Clemens von Pirquet, Baltimore: The great frequency of tuberculosis among infants is shown by the records of post-mortem examinations in Berlin, Vienna and New York. The different clinical forms of infantile tuberculosis are described as chronic tuberculosis of the visceral glands (which is often mistaken as a gastrointestinal marasm), chronic tuberculosis of the lungs, caseous pneumonia, and the meningitic and bronchitic forms of miliary tuberculosis. Children infected within the first year of age nearly always die from tuberculosis, whereas in older children the process is often localized. The best prophylaxis would be the entire separation of infants from adults who are likely to be tuberculous, even separation from parents in such a case. As this cannot often be strictly carried out, prophylaxis has to be exercised at least in such a way as to avoid kissing and fondling of children by tuberculous people, and coughing in their presence.

DISCUSSION

Dr. Helen C. Putnam, Providence, R. I.: Does Dr. v. Pirquet consider that there is danger of infection to an infant in a family which moves into a house formerly occupied by a family in which there had been active tuberculosis? How long does such danger, if any, persist, and what amount of cleaning is required to render such a building suitable for occupation?

Dr. Thomas Morgan Rotch, Boston: In antituberculosis work care must be taken not to exclude tuberculous patients from institutions in which they would be benefited and in which they do no harm. There is a hospital in New England which is eminently fitted to receive tuberculous babies and young children, but from which all such were excluded. Finally, acting on my advice, non-infectious cases were admitted. As a result complete cures were effected within three or four months. The medical profession is indebted to

Dr. von Pirquet for his development of the subcutaneous test for tuberculosis, as it has proved to be a means of detecting the disease in an earlier stage than is possible by any other means. Dr. v. Pirquet's work with tuberculin will make his name go down to posterity as one of the great reformers in tuberculin investigations, and as one who has done an immense amount of good to humanity.

Dr. Ward Crampton, New York: Would Dr. v. Pirquet advise the segregation of school children who have reacted positively to the subcutaneous test? One society in New York discovered that 23 per cent. of the children examined responded positively. If an examination of the public school children were to reveal the presence of tuberculosis among an equally large percentage of the children, the problem of separation and segregation would assume very serious proportions.

Dr. von Pirquet: A good cleaning of the whole house, with painting of the walls and fumigation of the rooms would be required to render a building such as described by Dr. Putnam free from infection. It has not yet been proved to what extent children suffering from tuberculosis are sources of infection. I do not consider it necessary to separate the children in a hospital except in the case of those suffering from open lung tuberculosis. I advise the separation of tuberculous children from well children when the test reveals the presence of the disease in an institution such as an orphan asylum, but do not urge the segregation of school children.

Dr. T. M. Rotch: In my opinion, the child who reacts positively should be taken out of school for his own sake, so that he may have outdoor treatment, and not because there is danger of his being a source of infection to others, especially as I do not consider that the danger always exists.

Dr. Guy Kiefer, Detroit: Does Dr. Rotch consider it necessary to distinguish between open and closed cases among school children who react positively to the test and who on that account have been segregated from the rest?

Dr. Rotch: My previous remarks applied only to noninfectious cases; the infectious cases should be isolated just as measles and smallpox are.

The Relation of Mothers' Occupations and Long Hours to Infant Mortality

Dr. Caroline Hedger, of the United Charities of Chicago, cited facts from England, America (colored) and Germany bearing on connection between occupation of married women and infant mortality. She discussed the influences on childbearing and on lactation of beast-of-burden trades, muscular fatigue trades, nervous fatigue trades, and poisonous trades, and enumerated desirable modifications in these trades with respect to hours, sanitation, time-limit before and after confinement. Dr. Hedger then took up the secondary effects on infant mortality of married women at work: wages, drink, drugging, homes and abortion.

She then went on to say: Women are in industry to stay. William Hard says: We cannot tomorrow dismiss 6,000,000. We must (1) find out the effect of factory work on women by laboratories, enumeration, birth statistics; (2) so arrange labor that (a) the woman can work without losing her chance of normal motherhood, including lactation; (b) develop day-nurseries; (c) use them as laboratories for teaching infant feeding; (d) always tend toward a wage that will permit those who wish to remain at home.

DISCUSSION

Mr. Edward Bunnell Phelps, New York, editor the *American Underwriter*, gave the statistics he had collected in an investigation which covered 14 textile manufacturing cities, of the relation of woman's work to infant mortality. These figures indicate that the infant mortality rate varies as does the percentage of working women of child-bearing age. This state of affairs is not confined to this country as, according to statistics representing eight leading textile towns in England from 1896 to 1905, the infant mortality rate is 182, while the normal rate for other towns is 147. In France, in textile towns, the rate was found to be 196, and in other cities 140; in German textile towns, 266; in other towns, 207. In the United States, the average in textile towns was 183, as against 145 for the registration area. According to the census of 1900 there were a trifle more than 1,000,000 women, sixteen years old and over, working in factories; their average earnings were a little less than 90 cents a day. In view of the inability of the mothers to care for their children themselves, or to provide healthful surroundings for their children, he advocated the establishment of some form of day nursery.

The Relation of Diet to Infant Mortality

Dr. J. P. Crozer Griffith, Philadelphia: The excessive mortality of early life occurs principally in artificially fed children and is due chiefly to diarrheal disturbances. The mortality can be largely prevented by breast feeding. There are difficulties in obtaining a suitable artificial food. Many reasons are assigned for weaning, but there is an apparently increasing desire of mothers to nurse their children. Artificial feeding increases mortality.

DISCUSSION

Mr. Hastings Hart, the Sage Foundation, New York: In the case of illegitimate children, the main obstacle in the way of maternal nursing has been the practice of physicians and nurses in maternity hospitals of advising the mother not to nurse the child on the ground that they would have to be separated eventually, and the mother would become too much attached to the child if she nursed it.

Dr. Woods Hutchinson, New York: Artificial foods of any sort are to be condemned. Mortality is least among the breast-fed infants; the percentage is 3 times greater among those fed on cow's milk; and still greater among those fed on artificial foods. I hope to see the time when the manufacture, advertising and sale of mixtures ostensibly for babies, but really for the profit of the manufacturers, will be a misdemeanor punishable by fine and imprisonment.

Dr. Ira S. Wile, New York: The responsibility for the proper feeding of infants rests on physicians, and goes back ultimately to the medical schools which should give more adequate instruction in pediatrics before turning its graduates loose on an innocent and unsuspecting public.

Dr. Lilian Welsh, Baltimore: It is not a question of physicians in some places, but of midwives.

Dr. Thelberg, Vassar College, advocated thorough physiological instruction of the students in women's colleges and in girl's schools.

Dr. Herman Schwarz, New York: The reduction of infant mortality could be accomplished by the combination of three methods: the care of the child before, during and for at least a year after birth; the education of parents; encouragement of breast feeding and securing pure milk for infants who have to be bottle fed. Breast feeding will reduce the great mortality from gastroenteritis.

(To be continued)

Marriages

Edgar Clay Doyle, M.D., to Miss Mary Cherry, both of Seneca, S. C., September 16.

Chester E. Kinzel, M.D., to Miss Elsie Bailey, both of Wilmington, Ohio, November 17.

Cleland G. Moore, M.D., North Bend, Neb., to Miss Emma G. Lewis, of Baltimore, October 5.

Harry M. Hosmer, M.D., Gary, Ind., to Miss Helen Barton, of Kansas City, Mo., November 23.

Albert Havens, M.D., to Miss Gertrude Crabtree, both of New Philadelphia, Ill., November 20.

Harry Waldemar Boice, M.D., to Miss Fannie Elizabeth Glassey, both of Brooklyn, November 24.

Preston G. Hundley, M.D., of West Virginia, to Miss Mary E. Lyell, at Baltimore, Md., November 24.

John F. O. Howell, M.D., Skidmore, Texas, to Miss Wila Williams, of Hickman Mills, Mo., recently.

Charles R. Sheridan, M.D., Maysville, Ky., to Miss Helen Carney of Wheeling, W. Va., November 30.

James R. Maxfield, M.D., Grand Saline, Texas, to Miss Marie Streeter, of Waco, Texas, September 29.

Richard Phillips Bell, M.D., Chattanooga, Tenn., to Miss Mary Grasty, at Staunton, Va., November 24.

Deaths

Alfred D. Kohn, M.D. Rush Medical College, Chicago, 1898; a member of the American Medical Association; in 1907 and 1908 a member of the Chicago Board of Education; assistant in medicine in Rush Medical College; chief of the clinic on gastrointestinal diseases at the United Hebrew Dispensaries; attending physician to Michael Reese Hospital; a specialist on diseases of the stomach and intestines; died in the Michael Reese Hospital, December 2, from cerebral hemorrhage, eight days after an operation for appendicitis, aged 40.

Isaac Newton Snively, M.D. Bellevue Hospital Medical College, New York City, 1889; a member of the American Medical Association, and a fellow of the American Academy of Medicine; professor of materia medica, therapeutics and clinical medicine, and dean of Temple College of Philadelphia; visiting physician to the Garrettson and Samaritan hospitals; died in the latter institution, November 23, from pulmonary thrombosis, following an operation for carcinoma of the colon, aged 45.

William Henry McKelvey, M.D. College of Physicians and Surgeons, New York City, 1866; a member of the American Medical Association; for 37 years a member of the Pittsburg Board of Education; for 34 years a member of the Central Board of Education, and for 20 years its president; physician to the Allegheny county jail from 1868 to 1881; and for 30 years a member of the city council; died at the home of his brother, in Pittsburg, November 23, aged 66.

Donald Churchill, M.D. Harvard Medical School, Boston, 1899; a member of the American Medical Association and American Academy of Medicine; secretary of the Providence (R. I.) Medical Association and treasurer of the Rhode Island Hospital Club; admitting physician to the Providence Lying-In Hospital; and surgeon on the staff of the Rhode Island Hospital; died at his home in Providence, November 23, from septicemia, following an operation wound, aged 39.

Harry Martyn Acheson, M.D. University of Pennsylvania, Philadelphia, 1880; of Washington, Pa.; a member of the American Medical Association; for several terms president of the Washington County (Pa.) Medical Society, and the Washington Academy of Medicine; one of the organizers of the Washington Board of Health, and for many years its president; died in St. Francis Hospital, Pittsburg, November 29, from general nervous breakdown, aged 51.

Albert M. Smith, M.D. Jefferson Medical College, Philadelphia, 1870; a member of the American Medical Association; twice a member of the Pennsylvania legislature; a veteran of the Civil War; for 29 years local surgeon of the Pennsylvania System; a member of the local pension board of Beaver Springs; and vice-president and director of the Beavertown Mutual Fire Insurance Company; died at his home in Beaver Springs, November 22, aged 65.

Richard Watson Fry, M.D. University of Virginia, Charlottesville, 1872; College of Physicians and Surgeons, New York City, 1873; a member of the Medical Society of Virginia; of Roanoke, Va.; local surgeon to the Norfolk and Western Railroad; for several years city physician and president of the Board of Health of Roanoke; died in the Jefferson Hospital in that city, November 22, after an operation for prostatitis, aged 59.

John Samuel Cooper, M.D. Georgetown University, Washington, D.C., 1868; of Louisville, Ky.; from 1868 to 1880 a surgeon in the army; later special agent for the quartermaster's department, U. S. Army, and an officer of the revenue service; died in the Norton Infirmary, Louisville, November 25, from peritonitis, following an operation for disease of the bladder, aged 66.

Samuel Kohn, M.D. New York University, New York City, 1877; formerly president of the Sanitarium for Hebrew Children, Rockaway Park; one of the founders and chief of the laryngologic, otologic and rhinologic departments of the German Polyclinic; died at his home in New York City, November 26, from chronic nephritis, aged 55.

John W. Slade, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1857; surgeon of the Eleventh Missouri Volunteer Infantry during the Civil War; for several years a member of the State Board of Medical Examiners of Oklahoma; died in his apartments in Guthrie, November 26, from senile debility, aged 83.

Jacob Quick, M.D. University of Pennsylvania, Philadelphia, 1851; surgeon of the Twenty-second New Jersey Volunteer Infantry during the Civil War; for a time a member of the staff of the German Hospital, Philadelphia; died at the home of his son in West Philadelphia, November 20, from senile debility, aged 83.

John Charles Shearer, M.D. State University of Iowa, Iowa City, 1896; a member of the Iowa State Medical Society; formerly of Tipton and Allison, Iowa; died at the home of his mother in Lehigh, November 18, from the effects of carbolic acid, self-administered, it is believed, with suicidal intent, aged 35.

Henry Morton Mixer, M.D. Berkshire Medical College, Pittsfield, Mass., 1854; assistant surgeon in the U. S. Navy during the Civil War; afterward a resident of New Hampton, Iowa, and since 1896 a practitioner of Neosho; died at his home in that city, November 23, from senile debility, aged 81.

Hiram A. Wright, M.D. Victoria College, Coburg, Ont., 1885; L.R.C.P., London, 1886; a member of the Michigan State Medical Society; an alienist and medical superintendent of the Pennsylvania Avenue Sanitarium, Detroit; died at his home in that city, November 24, from typhoid fever, aged 46.

William Geoghan, M.D. Albany (N. Y.) Medical College, 1873; a member of the Medical Society of the State of New York; one of the staff physicians of the Metropolitan Life Insurance Company; died suddenly at his home in New York City, November 27, from heart disease, aged 57.

John Barr, M.D. Victoria College, Cobourg, Ont., 1866; of Shelburne; for three terms a member of the Ontario legislature from Dufferin, and for two terms a member of the Dominion Parliament; was found dead in his bed in Ottawa, Ont., November 19, from heart disease, aged 66.

George Emil Voigt, M.D. University of Pennsylvania, Philadelphia, 1901; formerly coroner of Wayne county, Pa.; physician to the county jail and almshouse, and secretary of the Honesdale Medical Society; died at his home in that city, November 29, from uremia, aged 29.

Harlow James Boyd, M.D. Columbus (Ohio) Medical College, 1879; a member of the American Medical Association, and one of the most prominent practitioners of northern Minnesota; died suddenly at his home in Alexandria, November 21, from cerebral hemorrhage, aged 57.

William Samuel Howard, M.D. Medical College of Indiana, Indianapolis, 1892; L.R.C.S., L.R.C.P., Edinburgh, 1893; a member of the Roberts county (S. D.) board of health, and county physician; died at his home in Sisseton, November 19, from heart disease, aged 37.

Henri Theophile Fontaine, M.D. Harvard Medical School, Boston, 1894; a member of the New Hampshire Medical Society; physician in charge of the Pembroke (N. H.) Sanatorium since 1902; died in that institution, November 27, from tuberculosis, aged 42.

Benjamin Robert Bryant, M.D. College of Physicians and Surgeons, Baltimore, 1881; for two terms a representative in the House of Delegates from Southampton county, Va.; died at his home in Boykins, November 14, from pernicious anemia, aged 51.

Virginius Randolph Moss, M.D. Medical College of Virginia, Richmond, 1865; a member of the American Medical Association; for many years a practitioner of Barboursville, W. Va.; died in Moundsville, W. Va., recently, from senile debility.

Burr Schermerhorn, M.D. College of Physicians and Surgeons, New York City, 1863; a member of the local pension board and health officer of Honesdale, Pa.; died at his home in that place, November 25, from heart disease, aged 70.

George H. Aldrich, M.D. Tuft's Medical College, Boston, 1907; formerly house physician to the Waltham Hospital; and later a practitioner of Ludlow, Mass.; died in the Ludlow Hospital, November 22, from typhoid fever, aged 27.

May Burton Collins, M.D. Jefferson Medical College, Philadelphia, 1860; of Glasgow, Mo.; died at the home of his daughter in Kansas City, Mo., November 20, from skull fracture, due to a fall from a street car, aged 72.

Charles C. Van Kirk, M.D. Starling Medical College, Columbus, Ohio, 1897; a surgeon in the United States Indian Service; died at the Leech Lake Agency, Onigum, Minn., November 5, from spinal meningitis, aged 39.

Harvey Mitchell (license, Ind., 1897, years of practice); for 59 years a practitioner of Delaware county, Ind.; and since 1854, of Muncie; died at the home of his daughter in that city, November 22, aged 83.

Lewis Edgar Klinefelter, M.D. College of Physicians and Surgeons, Chicago, 1903; a member of the American Medical Association; died at his home in Rockford, Iowa, November 26, from typhoid fever, aged 32.

Albert R. Lash, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1881; a member of the American Medical Association; died at his home in Ellinwood, Kan., October 10, from cerebral hemorrhage, aged 66.

William H. McGuire, M.D. Eclectic Medical Institute, Cincinnati, 1874; a member of the Indiana State Medical Association; pension examiner; died at his home in Frankfort, November 27, from cerebral hemorrhage, aged 62.

Joseph Marion Lanham, M.D. University of Tennessee, Nashville, 1882; a member of the South Carolina Medical Association; died at his home near Woodruff, November 25, from cerebral hemorrhage, aged 48.

Aden Thomas K. Lynch, M.D. Kentucky School of Medicine, Louisville, 1893; a member of the Kentucky State Medical Association; died at his home in Short Creek, November 22, from typhoid fever, aged 45.

John C. Mahorney, M.D. Hahnemann Medical College, Philadelphia, 1878; was kicked in the abdomen by a horse, near his home in Ladoga, Ind., August 10, and died two days later from his injuries, aged 57.

Josephine E. McKenzie Roberts, M.D. Hering Medical College, 1897; assistant to the chair of diseases of women in that institution; died at her home in Chicago, November 8, from angina pectoris, aged 59.

Frederick William Fisher, M.D. Detroit (Mich.) College of Medicine, 1894; a well-known marine surgeon of Ashtabula, Ohio; died at his home in that city, November 25, from typhoid fever, aged 38.

Heber R. Elderkin, M.D. University of Louisville (Ky.), 1858; a member of the Idaho State Medical Association; was found dead in his office in Coeur d'Alene, November 18, from heart disease, aged 78.

James S. Knox, M.D. Louisville (Ky.) Medical College, 1882; while preparing to make a professional call, died suddenly in his barn at Pellville, Ky., November 20, from heart disease, aged 49.

Esther Hayes Young, M.D. University of Minnesota, College of Homeopathic Medicine, Minneapolis, 1893; of Minneapolis; died in the Asbury Hospital in that city, November 15, from cancer, aged 63.

Frank Kiefer, M.D. Texas Medical College, Galveston, 1867; of Roby, Texas; for 40 years a clergyman; died in the Hollis Sanitarium, Abilene, November 25, from cerebral hemorrhage, aged 76.

Chads D. Chalfant, M.D. Western Reserve University, Cleveland, Ohio, 1886; a member of the Illinois State Medical Society; died at his home in Streator, November 22, from diabetes.

Frederick W. Bates, M.D. Baylor University, Dallas, Texas, 1904; of Dallas; died in the Baptist Sanitarium in that city, November 20, after an operation for appendicitis, aged 29.

Robert Griffis, M.D. Medical College of Ohio, Cincinnati, 1853; for 56 years a practitioner of Middletown, Ind.; died at his home, November 18, from cerebral hemorrhage, aged 83.

Samuel James Kelly, M.D. Laval University, Montreal, 1879; for three terms a member of the common council of Fall River, Mass.; died November 15, from diabetes, aged 53.

Charles Fuller, M.D. Medical School of Maine, Brunswick, 1869; formerly of Lincoln, Maine; died at his home in Dorchester, Boston, November 22, aged 69.

A. R. McFadyen, M.D. Jefferson Medical College, Philadelphia, 1859; died at his home in Jackson Springs, N. C., November 18, from paralysis, aged 78.

Raymond Sauvage, M.D. Tulane University, New Orleans, 1879; died at his home in New Orleans, November 20, from cerebral hemorrhage, aged 66.

Charles F. W. Hall, M.D. Jefferson Medical College, Philadelphia, 1875; died at his home in Parksley, Va., November 14, from cerebral hemorrhage.

Edmund A. Crain (license, Mont., 27 years practice, 1889); died in his apartment in Butte, November 26, from an overdose of morphin, aged 56.

William J. Barron, M.D. Tulane University, New Orleans, 1859; died at his home between Ackerman and Sturgis, Miss., November 22, aged 75.

Edward N. Franklin, M.D. University of Pennsylvania, Philadelphia, 1869; died at his home in Gallatin, Tenn., November 21, aged 64.

Stephen Jack Welsh, M.D. New York University, New York City, 1882; died at his home in Monroe, N. C., November 19, aged 55.

George H. Schmitt, M.D. Detroit (Mich.) Medical College, 1881; died at his home in Los Angeles, November 24, aged 62.

Charles Cook Winslow (license, N. C., 1889); died at his home in Hartford, November 9, from locomotor ataxia, aged 52.

Book Notices

Modern Problems in Psychiatry. By Ernesto Lugaro, Professor of Neuropathology and Psychiatry in the University of Modena. Translated by David Orr, M.D., and R. G. Rows, M.D Publications of the University of Manchester, Medical Series, No. XII. Cloth. Pp. 305, with illustrations. Price 7 shillings 6 pence net. Manchester: University Press (Sherratt and Hughes), 1909.

The purpose of this book is to indicate the lines along which efforts should be made at the present time to solve the many difficult problems of psychiatry. We commend its study to every one who has, in any way, the care of the insane. It is in no sense a text-book wherein one may find cut-and-dried classifications and clinical descriptions to enable one to label particular cases that may fall under observation, but rather a series of essays logically connected and abounding in modern scientific data and philosophical discussion. Hypotheses naturally bristle throughout the book, for the author recognizes the oft-forgotten truth that "every particular cognition is a hypothesis, which, with an increase of experience, can acquire a greater degree of probability but which can never attain to absolute certainty" (p. 55). To the student of psychiatry Lugaro's work will prove to be more helpful and practical than nine-tenths of the text-book compilations with their confusing schemes of classification, ancient psychology, and unconfirmed clinical data. The body of the work consists of seven chapters. The general introduction rivets the attention at once.

Of modern psychiatry Lugaro affirms that "the general tendency which to-day is becoming increasingly stronger, aims at interpreting all mental disturbance as a pathologic manifestation, and welding psychiatry with general clinical medicine" (p. 17). We are cautioned not to "look on normal psychiatry as a purely introspective analysis" (p. 19); but to remember that "in no science do so many sciences dovetail into each other as in psychiatry" (p. 25). Indeed, the dominant tone of of the book, so clearly sounded in this introductory chapter, is that "the alienist must—as much as the time at his disposal and his individual capacity permit—take an active part in work developing in neighboring fields of research, cultivate other sciences, and help them to progress, in order to further the progress of his own" (p. 55); a truth which John Fiske long ago intimated when he asserted that psychology, in its broadest sense, was the science of sciences because the validity of every scientific observation and deduction must rest ultimately on the validity and reliability of the phenomena of mind.

Determination, realism and idealism, and other metaphysical questions are all critically passed in review in Chapter 2 and are more or less dismissed with the statement, "We reject as illusory all these traditional solutions and we deny the legitimacy of the metphysical problem" (p. 39). Anatomy and physiology are regarded with more hope for the elucidation of mentalization.

The neuron doctrine is the ground whereon the "anatomic problems" of the third chapter are worked out. Of this much-debated doctrine the author says, "For a short period it seemed as though it might be shaken from its foundations; but this was merely transitory; criticism stimulated a multitude of researches, and it can now be asserted that the neuron doctrine has successfully resisted all the attacks made on it" (p. 90). In this same chapter are brief but comprehensive discussions of neurotropism, the neurofibrils, and the neuroglia in their functional relationship to mental phenomena.

With Chapter 4, on pathogenesis, we plunge at once into the practical problems of clinical psychiatry, and continued wrestling with them throughout the rest of the book. The rôle of the intoxications and infections, that of exhaustion, those of congenital deficiencies, and of psychic and hereditary factors in the production of mental alienation are admirably presented. The author deprecates the great stress so often laid on the psychic causes. "Even the forms of insanity which are considered to be most easily influenced, if not determined, by psychic causes, may arise independently and without the slightest participation of any psychic disturbance" (p. 184). The analysis of the hereditary factor is profoundly learned and thoughtful. In view of the oft-reiterated commonplaces as to the relationship of heredity to degeneracy, it is highly refreshing to read that "heredity, if it comes into play at all, acts in a direction which is distinctly opposed to degeneration. . . . Degeneration is a disease of the stock, but it is a disease that is curable. . . . The mechanism of hereditary transmission—contrary to the biblical legend—is free from every blemish. It tends to transmit unaltered the products of biologic experience and the adaptations which have been acquired throughout the whole of the evolution of life. External influences alone are capable of disturbing it or of giving rise to disease" (p. 212).

As a final illustration of the author's fearless independence and keenness of reasoning, we note the study, in Chapter 5, of the nasologic problems. No mere hack-writer or text-book compiler would have dared to say, in face of the almost universally contrary practice, that "it would be vain to seek for distinctions based on psychologic observation alone. We should fall into the old errors of mistaking simple psychic syndromes for true diseases and of failing to recognize the close affinity of origin and mechanism which exists between the most diverse syndromes" (p. 253).

Such is this most thought-stimulating and broadly scientific book. We have deemed it best to show the high plane of scientific inquiry which it touches by quoting liberally from its pages. And we earnestly commend its careful perusal by every medical man who is interested in psychiatric problems and who sincerely wishes to become acquainted with the latest advances in this difficult yet fascinating branch of medicine.

Leucopathies, Métastases, Albuminuries et Icteres Leucopathiques. Par Emile Feuillié, Préparateur à la Faculté de Médecine. Paper. Pp. 196, with illustrations. Price, 6 francs. Paris: G. Steinheil, 1909.

This monograph, the result, according to the author's statements, of seventeen years of investigation, bestows on the leucocyte a much more independent rôle than is commonly conceded to it. The conception of a "leucopathy," i. e., of primary modifications in the activities of the leucocytes (secretion, motility, organ infiltration, etc.) is created and a new nomenclature invented that is intended to express these special perversions. The introduction of many new terms and of the hypothetical pathologic conceptions they are meant to illustrate renders the understanding of the volume difficult. The author speaks an unfamiliar language; his disquisition may contain a valuable diamond of truth, but it is very much obscured by the setting given to it. It seems a pity that the nomenclature should be so involved; it prejudices the reader against the value of the statements made. What is true and what is new, could surely be expressed in simple language, readily understood by any one familiar with the ordinary terminology of the pathology of the blood. Of the many heterodox statements enunciated, the following may be selected as types: "In acute nephritis the lesion of the 'noble element' does not produce leucocytic infiltration. If infiltration is present it is due to a coexisting 'leucosis.'" "Cell casts in the urine are an indication of a leucopathy and not of a nephritis." "Edema may coexist with albuminuria; both are simultaneous effects of the same leucopathy." Much is said of nephrosis, nephrexosis and exonephrosis, of leucoxosis and exoleucosis and of leucopathic fibrosis, but it is all obscure. The pamphlet is offered as an incomplete thesis; and the writer naively states, "My master, Bouchard, has advised me to be brief in order to be clear." This is good advice, but it has not been followed. It is to be hoped that at some future day Dr. Feuillié will furnish a brief, clear and comprehensive exposition of this subject in order that more ample justice may be done his diligent labors by the ordinary reader.

Tufts Medical Diet Charts. (Charts A and B.) Prepared by H. D. Arnold, M. D., Professor of Clinical Medicine at Tufts Medical College, Boston. Single Charts, 5 cents; 50 Charts, $2; 500 Charts, $18; 1,000 Charts, $30. Philadelphia: W. B. Saunders Co., 1909.

These are conveniently arranged charts for indicating and calculating the value of the diet. Chart A has space for recording the diet for five successive days or for five changes of diet for any interval of time. Chart B fulfils the same function for a single day. The nutritive value of the food is given for such measures as are used in every-day life. The charts will prove of very practical value for those who give any thought to diet in the treatment of disease.

Chemical and Microscopical Diagnosis. By Francis Carter Wood, M.D., Professor of Clinical Pathology, College of Physicians and Surgeons, Columbia University, New York. Second Edition. Cloth. Pp. 725, with 192 illustrations and 9 colored plates. Price, $5. New York: D. Appleton & Co.

In this second edition of his well-known book, the author has kept his text clear and concise and has eliminated many tests which have proved less accurate and valuable than those inserted in their place. Additional matter has been introduced on some of the new methods for determining the functional activity of the gastro-intestinal tract, especially noticeable being the desmoid reaction of Sahli and the nucleus test of Schmidt. In the chapter on the blood, few insertions are found and, indeed, few were needed, as this section was exceptionally complete in the first edition. The discussion of the *Spirochæta pallida* is, perhaps, somewhat limited, although it is becoming more and more probable that this organism may be only incidentally associated with syphilis. It is unfortunate that Wood has made no mention of the work of Ricketts on the causation and spread of Rocky Mountain fever, as this is not only of great interest but is of extreme importance.

The introduction, into the section on urine, of Folin's methods for the determination of ammonia and of creatinin, as well as of various new and more reliable methods for the determination of beta-oxybutyric acid, has greatly enhanced the working value of this portion of the book. It would, however, seem that the author should have taken the opportunity in this revision to enlarge greatly his clinical discussions of the various factors, which may be closely studied in the urinary output.

It is in the section on transudates and exudates that one observes the greatest changes. Here one finds a discussion of Cammidge's reaction C, of the cutaneous and ocular tuberculin reactions, of the opsonic index, of the Wassermann and hemolytic tests, and a treatment of the Negri bodies as associated with rabies as well as of the Leishman-Donovan bodies as related to kala-azar. These insertions are treated clearly, although somewhat briefly; they should, however, prove of great value to the general as well as to the special student.

This work is to be especially commended for the clearness and brevity of its text, for its careful and judicious selection and discussion of the tests and methods advocated, and for its thorough treatment of the general subject matter of chemical and microscopic diagnosis. The cuts and plates are satisfactory and entirely adequate. A complete index makes the book a very easy one with which to work.

Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition. Part VIII. Gout. By Prof. Dr. H. Strauss, Professor of the Third Clinic, Royal Charity Hospital, Berlin. Authorized American Edition. Translated Under the Direction of Nellis Barnes Foster, M.D., Associate Physician to the New York Hospital. Cloth. Pp. 70. Price, $1. New York: E. B. Treat & Co., 1909.

This little volume is the authorized American translation of a series of articles published seven years ago. They are written altogether for the general practitioner and make no claims to exhaustiveness. The chapters on the pathogenesis of gout, including the pathology and chemistry of uric acid, are clear and concise and contain all the information practically necessary. As was to be expected, particular importance is given to German publications, while the valuable American contributions to this subject are altogether omitted. The symptomatology of uricacidemia is covered in about two hundred words occupying one page. This brevity is commendable, especially by contrast with the voluminous, vague symptomatology covering many pages in other monographs on the subject. There are really very few clean-cut definite symptoms of uric acid intoxication.

The therapeutics of gout are very well presented in this work, especially from the dietetic standpoint. Much that is here recommended apodictically seems rather theoretical and commands consideration chiefly because it is supported by the authority of so careful and experienced a clinician as the author of this monograph. There is nothing new about the treatment of the acute attacks, or about the balneologic management of gouty cases. A great deal of conservatism is displayed in the recommendation of the protean array of drugs that have at different times been recommended for the treatment of gouty manifestations.

Semmelweis, His Life and His Doctrine. By Sir William J. Sinclair, M.A., M.D., Professor of Obstetrics and Gynecology in the University of Manchester. Cloth. Pp. 369. Price, 7 shillings 6 pence. Manchester: At the University Press, 1909.

With the exception of a small monograph written by Dr. Duka, a Hungarian, and published in 1888, this is the first biography of Semmelweis in the English language. This remarkable man, perhaps the only medical discoverer who can be ranked with Jenner in regard to the importance of his discovery, has a life-history as sad as it is interesting and instructive. Professor Sinclair has succeeded in giving a very interesting picture of the man and of the condition of obstetrical practice and teaching of his time, and in conveying a clear impression of the contents of his epoch-making and immortal work, "The Etiology, the Nature and the Prophylaxis of Childbed Fever." In drawing this picture Sinclair has quoted largely from all the chief physicians of Austria, Germany, France, England, Italy and other European and foreign countries, as well as from the work of Semmelweis himself. In this way we get impressive and fascinating details drawn by contemporary hands of a struggle for the acknowledgment of a truth.

The book is divided into nine chapters, the first two of which contain the introduction and a brief sketch of Semmelweis' parentage and nationality. Chapters 3 and 4 describe his life in Vienna, and the rise and spread of the doctrine of the contagiousness of puerperal fever, the disappointment of Semmelweis on account of his treatment, and his departure from Austria. Chapter 5 contains an account of the beginning of his work in Budapest and the further diffusion of his theory before the appearance of his book. In Chapter 6 there is a short but satisfactory abstract of Semmelweis' book, together with a review of his correspondence and an account of the further dissemination of his teachings. Chapter 7 gives an account of his last illness and a summary of the spread of Semmelweis' doctrine. In Chapter 8 the work of forerunners and contemporaries is reviewed and the claims of Holmes considered. While admitting the services of Holmes, Sinclair holds that the work of Semmelweis and that of Holmes are not to be compared. One made a discovery and founded a doctrine; the other did not contribute a fact of his own, but conferred great benefits on humanity by devoting his literary genius to attracting attention to puerperal fever and by trying to suppress the practices which brought childbed fever in their train. Sinclair says, "If Semmelweis could have written like Holmes his 'Etiology' would have conquered Europe in twelve months." In Chapter 9 the relations of the doctrine of the contagiousness of puerperal fever to bacteriology are discussed.

The book closes most appropriately with the eloquent sentiment of his sympathetic biographer, Bruck of Budapest:

"The great revolution of modern times, in obstetrics as well as in surgery, is the result of the one idea that, complete and clear, first arose in the mind of Semmelweis and was embodied in the practice of which he was the pioneer. When we with just satisfaction contemplate and enjoy the achievements which with mighty strides bring us nearer to the Fortune's crowning slope of full fruition, every time must the name of Semmelweis be uttered with grateful recognition."

Clinical Treatises on the Symptomatology and Diagnosis of Disorders of Respiration and Circulation. By Prof. Edmund Von Neusser, M.D., Professor of the Second Medical Clinic, Vienna. Authorized English Translation by Andrew MacFarlane, M.D., Professor of Medical Jurisprudence and Physical Diagnosis. Part III. Angina Pectoris. Cloth. Pp. 71. Price, $1. New York: E. B. Treat & Co., 1909.

This monograph has been a recognized classic for a number of years. In so far as nothing new has been contributed either to the pathogenesis, the diagnosis or the treatment of angina pectoris since this treatise was written, the present English version fulfils a useful purpose. The translation is fairly good. It does not obscure nor does it embellish. The differentiation by type of case-reports from the text proper is omitted in the English edition, probably in order to make a larger volume.

A Book of Quatrains, Original and Translated. By Frederic Rowland Marvin. Cloth. Pp. 101. Price, $1. Boston: Sherman, French & Co., 1909.

This little book is a compilation of original and translated quatrains, many of which are classical. It furnishes pleasant reading for a leisure hour.

Medicolegal

Company Maintaining Hospital Not Liable for Surgeon's Failure to Give Promised Notice of Changed Condition of Patient

The Court of Civil Appeals of Texas says that the case of Carroll vs. St. Louis Southwestern Railway Co. (120 S. W. R. 1079) was founded on the alleged failure of the chief surgeon in charge of the defendant company's hospital to comply with a promise he had made to notify the plaintiff of any unfavorable change in the condition of her son, as a result of a surgical operation he was to undergo for appendicitis.

Admitting all that was alleged—that the promise was given, and that the surgeon either wilfully or negligently failed to send the notice—the court does not think it followed that the railway company would be liable for the consequences of such failure. Before the company could be held responsible it must appear from the averments of the petition, at least, that it owed the duty of sending that notice to the plaintiff when the conditions arose calling for such information. The right to recover damages must depend on the breach of some duty assumed by contract, or imposed by the law of the land. It was claimed only that the surgeon made a promise, without alleging anything which would, in law, constitute a consideration giving to such a promise the force of a binding contract to perform the particular service. There was nothing to show that this promise was more than a personal and gratuitous undertaking on the part of the surgeon to accommodate an anxious mother. But, assuming that it was personally binding on him, there was nothing alleged which would show that he had authority to bind the company by any such promise.

The petition showed that the defendant was an ordinary railway corporation engaged in the business for which such companies are usually chartered. It maintained a hospital for the benefit of its sick and disabled employees, and had placed the surgeon in charge for the purpose of treating the inmates. Certainly, it could not be contended, with any show of reason, that this surgeon had the authority to make binding engagements to transmit to outsiders having no connection with that institution messages regarding the condition of the inmates.

From the facts stated, the only dereliction on the part of the railway company for which the plaintiff might have maintained an action for damages would be such negligence as might have caused the death of her son. But nothing of this character was charged.

If this action be regarded as one founded on the negligent failure to perform a legal duty, as distinguished from a breach of contract, the petition still failed to state any elements of damages recoverable in such a suit. No physical or personal injury was alleged, but mental anguish alone constituted the damages claimed. The doctrine laid down in the telegraph cases, and relied on by the plaintiff as sustaining her right to recover for mental anguish alone, distinctly places their holding on the ground of a breach of contract.

Admissibility of Hospital Records as Evidence

The Supreme Judicial Court of Massachusetts applies, in the personal injury case of Delaney vs. Framingham Gas Fuel and Power Co. (88 N. E. R. 773), to hospital records, practically the same rules which it has applied to tradesmen's books, to determine their admissibility in evidence. The hospital records in question, it says, were not made in accordance with a requirement of law and therefore were not legal records within the meaning of the rule that legal records or copies thereof are generally admissible in evidence. Still it appeared that the hospital records were made in the usual course of business, by a person in the discharge of a duty, who appeared not only as the maker of them, but as their custodian. If she had died and her handwriting had been proved, in the absence of any other testimony as to the manner in which they were made up, they would have been admissible in evidence. It would have been assumed that the records were of facts known to her. The rule or requirement applicable to such records ordinarily is that the entries were made by a person who had personal knowledge of the truthfulness of the statements. That rule or requirement has been adhered to quite generally, except where in the course of the business the clerk making the entry received his information either orally or in writing from various persons whom he cannot expect to remember and whom it will be impracticable to call as witnesses.

But in this case it appeared that the person who made the records and had the custody of them, never had any personal knowledge of the facts stated therein; that she received slips of paper from the physician, and copied them into the record, and that was all she knew about them. The record was offered as evidence to show that the statements therein made were true. As handed to the witness by the physician, they were simply statements of the physician as to what the patient had said to him, or as to the diagnosis made by the physician. The records were comparatively recent. It was not shown that the physician was not living and within the jurisdiction of the court. No necessity was shown therefore for the introduction of this hearsay testimony. For aught that appeared there was better evidence. Under these circumstances the records were not admissible in evidence. The reason on which the general rule was based, namely, that the record should be a record of facts of which the writer had personal knowledge, should be applied. The case was not within the above-mentioned exception to the general rule.

Assistant Not Liable from Operating Surgeon Leaving Sponge

The Supreme Court of Michigan says in the malpractice case of Brown vs. Bennett and Smith (122 N. W. R. 305) that it was the theory of the plaintiff that the defendants jointly undertook to perform an operation on her; that they, or one of them, left in the abdominal cavity one of the gauze pads or laparotomy sponges used in performing the operation; that it remained there for ten months; that this was negligence, and that for the effects of such negligence both of the defendants were liable. The trial resulted in a judgment against both of the defendants for $625.

But the Supreme Court finds no testimony tending to prove a joint undertaking of the defendants. The case for the plaintiff, it states, stated most favorable to her, was that she was advised by her physician, Bennett, who had treated her for certain disorders, that the remedy for her ailment was a surgical operation. The family of the plaintiff, including her husband, knew of this advice, consented that an operation should be performed, and that the defendant Bennett should select and arrange with some surgeon to perform the operation. They were told that Dr. Smith had been selected; that a trained nurse would be selected by him; that it was proposed that there should be present Dr. Smith, who was to receive $75, and Drs. Bennett, Crosby and Ransom, who were to be paid $10 each. The husband or father of the plaintiff, or both, agreed to procure, and did procure, $100 and gave it to Dr. Bennett, and took his receipt therefor. Afterwards they paid him $5. This money Dr. Bennett distributed as above indicated, receiving himself $10. The husband of the plaintiff, or some one for him, also paid the nurse. Every one understood that Dr. Smith would perform the operation, assisted by the other physicians.

There was some testimony to the effect that the contract made, not by the plaintiff, but by her husband and her father, was made with the defendant Bennett, and that he was to see that the operation was properly performed, and would guarantee a cure. But this *did not tend to prove a joint* undertaking by these defendants to perform the operation. It was said in the brief for the plaintiff that "the husband of the plaintiff agreed to employ Dr. Bennett and Dr. Smith to perform this operation," but it was the not uncommon case of a practicing physician advising a patient to submit to a surgical operation to be performed, not by himself, but by some surgeon of reputation, skill and experience, for which operation, with the consent of his patient, he makes the necessary arrangements, in performing which he assists the operating surgeon as directed or advised. The operation was not performed by these defendants jointly. Dr. Smith performed it, as his testimony and that of each of the physicians and of the nurse conclusively showed.

In accordance with modern methods, the operation was an organized performance. Dr. Crosby administered the anesthetic. That was his duty and responsibility. Drs. Bennett and Ransom assisted the operating surgeon. "They stood with me," Dr. Smith testified, "at the side of the patient and assisted me as I directed; that is, they retracted the sides of the wound when it was open, pulled them apart, the sides of the wound. They helped in regard to sponging up blood, and perhaps occasionally caught a spurting vessel when it was cut, and that is about all, generally. I performed the operation. The duty of Dr. Ransom was practically the same as Dr. Bennett." The nurse had charge of the sponges before and after they were used, and counted them before and after the operation. That was her duty. The operating surgeon, having inserted the large sponge or pads, and having removed all of them in the immediate field of operation, relied on the nurse and her assurances that all sponges were accounted for, and closed the wound.

Undoubtedly each case of this nature must stand on its own facts. The length of time required to perform the operation, the nature of the operation itself, as whether the field is deep in the abdomen, the number of pads or sponges used to keep the field of operation clear, the opportunity or chance for one or more of the pads to be displaced, rolled on itself, and hidden, all of these and other considerations measure the required skill and care of the surgeon.

It must be considered as established in this case that a sponge or pad was left in the abdomen, and that an injury to the plaintiff was the consequence. It was not claimed, and was not to be supposed, that any one was intentionally at fault. Both of the defendants were men whose general professional knowledge and skill were unquestioned and undoubted. They were not engaged in a trespass. Neither was employed by the other. Each was required to exercise ordinary skill and care. But direction and control of the operation were both with one man. Whether responsibility for what occurred is rested on contract or on negligent performance of duty, there is no rule of law which under the undisputed facts impute want of skill or care by Dr. Smith to Dr. Bennett. The jury should have been so instructed.

As to Dr. Smith, it is held that the court did not acquire jurisdiction over him, because he was a non-resident of the county where sued and under the circumstances could not be held to come within the Michigan statute, which, in effect, provides that what is termed an action of trespass on the case against two or more defendants may be brought in any county where one or more of them resides or is found.

The conclusions are held to require a reversal of the judgment, and no new trial.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

November 27

1 *Treatment of Pulmonary Tuberculosis Based on the Assumption that the Dietetic Cause of the Disease is Lime Starvation. J. F. Russell, New York.
2 Is There a Venereal Peril for Us? J. Van R. Hoff, U. S. Army.
3 *Hemolysis and its Diagnostic Significance in Cancer and Tuberculosis. F. Smithies, Ann Arbor.
4 Atropin as a Hemostatic. W. F. Waugh, Chicago.
5 *A Statistical Study of Alcoholism as a Causative Factor in Insanity. C. R. McKinniss, Norristown, Pa.

1. Treatment of Pulmonary Tuberculosis.—The special aim of Russell's treatment is to supply lime phosphate, casein, and hydrochloric acid together. Neither alone will answer. They must all be present in the stomach at the same time. The addition of dilute hydrochloric acid to milk and eggs accomplishes this endeavor. With the exception that vegetable juice is no longer prescribed and that the total amount of food consumed is less, the use of this acid is the only notable change made in the treatment heretofore employed. Vegetable juice, glycerin and calcium chlorid have been discontinued. It is now probable that the good effects of vegetable juice were chiefly due to its acidity; of glycerin to its power of extracting enzymes. Calcium chlorid is formed in milk when hydrochloric acid is added. Russell believes that the results so far obtained give sufficient promise of an improvement in the treatment of the tuberculous in the home climate to warrant their publication. The experiment is not yet completed. There are 25 of the original number of patients still under treatment. Further reports will be made until the work is finished.

3. **Hemolysis in Cancer and Tuberculosis.**—The results furnishing the basis of Smithies' communication are based on the findings in 85 patients affected with various ailments. Some were very interesting, particularly the cancer patients, the syphilitics, the tuberculous patients, and those affected with non-malignant diseases, but with diseases frequently productive of anemia, as Graves' disease, pernicious and severe secondary anemia, Addison's disease, etc. Of the malignant tumors, in the main, serum from moderately advanced and advanced cases reacted well, while recent tumors either caused poorly manifested reaction or none at all. The cases which did not react at all were one early carcinoma of the prostate, one scirrhus carcinoma of the stomach, and one early malignant tumor of the breast. There were two "undetermined" reactions, namely a late cancer of the breast and an early cancer of the uterus. There was one case of "reverse hemolysis," first emphasized by Crile. Both these patients had moderately advanced lesions. Six patients with tuberculosis showed negative reaction, and a like number are for fairness recorded as "undetermined." Of 12 cases of syphilis, 8, or 65 per cent., were negative, while 3 were classed as "undetermined." In all, the reactions were slightly manifested. One case—a patient with tertiary lesions and grave anemia—exhibited positive reaction. Of 25 patients affected with various more or less serious diseases, selected at random, 5, or 20 per cent., exhibited positive reaction. Of 25 patients ill, but clinically non-cancerous, 6 were classed as "undetermined." These were respectively severe acne, chronic parenchymatous nephritis, old rheumatic endocarditis, gall-stones with jaundice, neurasthenia, and pernicious anemia. One case of chorea—a young female with anemia—exhibited "reverse hemolysis." Of the clinically normal individuals—19 in number—one gave slight positive reaction, while 92.7 per cent. were negative. It seems that the blood serum of the majority of patients affected with malignant disease is capable of destroying normal red blood cells. It also appears that while this fact is very interesting from a clinical and etiologic standpoint, similar manifestations are possible, in non-cancerous patients. It should be emphasized that while the seroreactions for cancer and tuberculosis may furnish valuable and interesting information, they cannot be accepted as sole or deciding evidence. In confirmation of clinical findings they may be of importance, but as with other laboratory tests, of like nature, they cannot take the place of careful anamneses, careful examination of the patients from every viewpoint, and the adoption of clinical measures which have been proved feasible and dependable.

5. **Alcohol as a Causative Factor in Insanity.**—McKinniss' study includes 520 male patients. In 46 per cent. of these, alcohol either alone or in combination, was an important etiologic factor. In 13.5 per cent. they were classed as alcoholic psychoses. In 41 per cent. of the imbeciles and 34.5 per cent. of the epileptics, alcohol was responsible for their commitment.

New York Medical Journal

November 27

6 *Relation of Tuberculosis to Infant Mortality. C. F. von Pirquet, Baltimore.
7 Surgical Treatment of Posterior Displacements of Uterus. C. C. Barrow, New York.
8 *Significance of Posture in Obstetrics. A. F. A. King, Washington, D. C.
9 The Percentage Principle as Applied in Infant Feeding. H. Koplik, New York.
10 *Biology as the Basis of Infant Feeding. H. D. Chapin, New York.
11 The Question of Clean Milk. W. L. Carr, New York.
12 The Feeding of Infants During Illness. L. E. La Fétra, New York.
13 Expert Testimony. T. J. Kelley, Willimantic, Conn.
14 *Post-epileptic Albuminuria. J. F. Munson, Sonyea, N. Y.

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hydrochloric acid is added. Russell believes that the results so far obtained give sufficient promise of an improvement in the treatment of the tuberculous in the home climate to warrant their publication. The experiment is not yet completed. There are 25 of the original number of patients still under treatment. Further reports will be made until the work is finished.

3. **Hemolysis in Cancer and Tuberculosis.**—The results furnishing the basis of Smithies' communication are based on the findings in 85 patients affected with various ailments. Some were very interesting, particularly the cancer patients, the syphilitics, the tuberculous patients, and those affected with non-malignant diseases, but with diseases frequently productive of anemia, as Graves' disease, pernicious and severe secondary anemia, Addison's disease, etc. Of the malignant tumors, in the main, serum from moderately advanced and advanced cases reacted well, while recent tumors either caused poorly manifested reaction or none at all. The cases which did not react at all were one early carcinoma of the prostate, one scirrhus carcinoma of the stomach, and one early malignant tumor of the breast. There were two "undetermined" reactions, namely a late cancer of the breast and an early cancer of the uterus. There was one case of "reverse hemolysis," first emphasized by Crile. Both these patients had moderately advanced lesions. Six patients with tuberculosis showed negative reaction, and a like number are for fairness recorded as "undetermined." Of 12 cases of syphilis, 8, or 65 per cent., were negative, while 3 were classed as "undetermined." In all, the reactions were slightly manifested. One case—a patient with tertiary lesions and grave anemia—exhibited positive reaction. Of 25 patients affected with various more or less serious diseases, selected at random, 5, or 20 per cent., exhibited positive reaction. Of 25 patients ill, but clinically non-cancerous, 6 were classed as "undetermined." These were respectively severe acne, chronic parenchymatous nephritis, old rheumatic endocarditis, gall-stones with jaundice, neurasthenia, and pernicious anemia. One case of chorea—a young female with anemia—exhibited "reverse hemolysis." Of the clinically normal individuals—19 in number—one gave slight positive reaction, while 92.7 per cent. were negative. It seems that the blood serum of the majority of patients affected with malignant disease is capable of destroying normal red blood cells. It also appears that while this fact is very interesting from a clinical and etiologic standpoint, similar manifestations are possible, in non-cancerous patients. It should be emphasized that while the seroreactions for cancer and tuberculosis may furnish valuable and interesting information, they cannot be accepted as sole or deciding evidence. In confirmation of clinical findings they may be of importance, but as with other laboratory tests, of like nature, they cannot take the place of careful anamneses, careful examination of the patients from every viewpoint, and the adoption of clinical measures which have been proved feasible and dependable.

5. **Alcohol as a Causative Factor in Insanity.**—McKinniss' study includes 520 male patients. In 46 per cent. of these, alcohol either alone or in combination, was an important etiologic factor. In 13.5 per cent. they were classed as alcoholic psychoses. In 41 per cent. of the imbeciles and 34.5 per cent. of the epileptics, alcohol was responsible for their commitment.

New York Medical Journal

November 27

6 *Relation of Tuberculosis to Infant Mortality. C. F. von Pirquet, Baltimore.
7 Surgical Treatment of Posterior Displacements of Uterus. C. C. Barrow, New York.
8 *Significance of Posture in Obstetrics. A. F. A. King, Washington, D. C.
9 The Percentage Principle as Applied in Infant Feeding. H. Koplik, New York.
10 *Biology as the Basis of Infant Feeding. H. D. Chapin, New York.
11 The Question of Clean Milk. W. L. Carr, New York.
12 The Feeding of Infants During Illness. L. E. La Fétra, New York.
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The infectious organisms found in Billings' 14 cases were as follows: The pneumococcus, 11 cases; streptococcus, 3 cases. The organisms obtained in the 11 patients suffering from pneumococcemia had many of the morphologic characteristics of streptococci. Study of the organisms in culture and in animals proved that they were the pneumococcus. In one patient of this series the infectious endocarditis followed pneumonia. Tonsillitis had occurred in two cases. In the other patients the source of infection could not be learned. There can be no doubt whatever that simple local infection like tonsillitis, as well as abscess of the aural cavities, infection of the postnasal space of the antra, and so forth, may be the port of entry.

In some cases of this series the infection was implanted on an old endocardial or valvular scar. An old heart lesion existed in 7 patients, of whom 6 had suffered from rheumatic fever and one from chorea. Two of the patients gave no history, and the question of previous heart lesion was in doubt. In 5 the infection had apparently been implanted on a normal endocardium or valve. The valves involved in the 14 cases were as follows: aortic valve alone, 1; mitral alone, 7; pulmonary semilunar alone, 1; aortic and mitral together, 5; mitral and tricuspid together, 1. The evidence of heart lesion, as manifested by murmur, may be absent in the primary cases during the earlier part of the disease, and sometimes throughout it. The prognosis with the present knowledge or want of knowledge in reference to any specific treatment is, in his experience, bad.

The treatment should be absolute rest, with good air, sunshine, as much simple liquid and soft solid nourishment as may be given, and the use of those remedies which will conserve the patient's strength and the functions of the organs without too much mischievous interference. Inoculations of patients with large doses of their own dead pneumococci was always harmful. Observation of patients injected with even small doses (2,500,000) leads Billings to believe that this form of treatment for infectious endocarditis due to the pneumococcus is not only devoid of benefit to the patient, but probably is harmful.

42. **Venous Pulse in Paroxysmal Tachycardia.**—From the point of view of the venous pulse all cases of paroxysmal tachycardia apparently fall into a group which includes those cases in which the venous pulse assumes the "ventricular" or "positive" type, and there is no evidence of any contraction of the auricles. It is important to distinguish between cases of idiopathic paroxysmal tachycardia, with sudden onset and cessation, and cases of simple rapid heart action beginning and ending more or less gradually.

43. **Relation of Iodin to Structure of Human Thyroids.**—Marine and Lenhart conclude that active thyroid hyperplasia is present in all developing goiters in all animals. All thyroid hyperplasia so far as they can determine, is anatomically, chemically (iodin) and biologically the same. Thyroid hyperplasia develops in both normal and colloid glands. Colloid glands, anatomically, chemically and biologically, are the nearest approach to the normal gland that hyperplasias can become, and obey all the known biologic laws of normal glands in so far as these laws are at present known. The various degenerations, hemorrhages and cysts are secondary and complicating changes engrafted on to the three fundamental types of normal hyperplastic and colloid glands. Iodin is necessary for normal thyroid activity. The iodin content varies inversely with the degree of hyperplasia. The percentage of iodin present in the thyroids is variable, but there is a quite constant minimum percentage necessary for the maintenance of normal or colloid gland structure. Iodin is taken up rapidly by the thyroid, the rapidity depending on the degree of active hyperplasia. Mild degrees of thyroid hyperplasia accompany or follow many of the chronic nutritional disturbances without detectable clinical symptoms referable to the thyroid. Exophthalmic goiter is constantly accompanied during the progressive stage of the disease by thyroid hyperplasia and the iodin percentage varies inversely with the degree of hyperplasia. In endemic cretinism the fibrous overgrowth with atrophy of the gland cells is consequent on active hyperplasia and is associated with very low iodin content. In myxedema the anatomic and iodin changes are similar to those of cretinism.

44. **Active and Inactive Serum in Test for Syphilis.**—Although the use of active serum gives more delicate results in syphilis, Swift says it is not to be recommended, because it gives too high a percentage of reactions with non-syphilitic serums. When inactive serum is employed in the proportion of twice the amount of guinea-pig serum, a high percentage of positive reactions is obtained in syphilis, and non-syphilitic serums, giving a positive reaction with active serum, give a negative reaction when the same serum is inactivated. The use of inactive serum instead of active serum renders the Noguchi method more accurate and nearly as convenient as originally described, and still easier of application than the Wassermann method. The amount of blood required can readily be obtained without resorting to venous puncture, so that it is possible to make frequent tests without too much inconvenience to the patient.

45. **Lesions Resulting From Bile Salts.**—Sellards found that the injection of guinea-pigs with the lethal dose of sodium glycocholate produces lesions in the stomach which are relatively specific. These lesions are closely analogous to those produced by the direct injection of bile into the pancreatic duct. Injection of sodium taurocholate into the parotid gland of dogs produces lesions which are less extensive than for corresponding conditions in the pancreas. An extract of the pancreas is actively hemolytic *in vitro*. Its behavior toward blood serum and corpuscles in test-tube experiments is exactly analogous to that of the bile salts. The pancreatic ferments might, theoretically, augment the lesions produced, *in vivo*, by bile. The hemorrhage in the acute pancreatitis caused by bile would, judging from the hemolytic reactions, tend to neutralize both the toxic action of the bile salt and also of the pancreatic secretions.

46. **Effect of Hexamethylenamin on Guinea-Pigs.**—Frothingham found that hexamethylenamin, when given subcutaneously in guinea-pigs, either in single doses or in repeated doses, produces necrosis of the muscle and cellular reaction at the point of inoculation. It also causes congestion of the stomach vessels, and in some cases hemorrhage into the mucosa, with ulcer formation. Frothingham says that this work offers no proof as to what lesions in man may be the cause of symptoms occasionally produced by hexamethylenamin, but it suggests that these lesions are not organic. The most interesting points brought out are the enormous amount of hexamethylenamin a guinea-pig can receive subcutaneously without apparent injury, and the fact that hexamethylenamin is another drug to add to the list of those that may cause hemorrhage in the stomach walls of guinea-pigs.

Ophthalmic Record, Chicago

November

47 Conservative Surgery in Ocular Injuries. L. W. Fox, Philadelphia.
48 The Major Smith Modification of the Modern Cataract Operation—Intra-Capsular Extraction of the Cataractous Lens. R. Sattler, Cincinnati.
49 An Operation for Enucleation of the Eye. M. Iversen, Stoughton, Wis.
50 Keratoplasty with the Rabbit's Cornea. F. Valk, New York.
51 Teaching of Ophthalmoscopy to Undergraduates and Graduates in Medicine. W. A. Fisher, Chicago.
52 Ocular Symptoms in Pellagra. E. M. Whaley, Columbia, S. C.

Colorado Medicine, Denver

November

53 *Tuberculosis and its Treatment by Mercury. B. L. Wright, U. S. Navy.
54 Correlation of Pathologic States Between the Thyroid and Prostate Glands and the Uterus, Chiefly Bearing on Epilepsy and Other Nervous Disorders. E. Dupuy, Paris.

53. **Tuberculosis.**—Since the latter part of October, 1908, Wright has made it a routine practice to examine the feces as well as the sputum of every tuberculous patient, and in almost every instance he has demonstrated the presence of the tubercle bacillus in the feces, in many cases in which repeated examinations of the sputum were negative and in which the pathologic lesions of the disease were apparently confined to the lungs. He has also found the bacillus in the feces in cases in which it had long since disappeared from the sputum and the patients appeared to be otherwise clinically

cured. With the above facts in view, it must be admitted, he says, that tuberculosis is primarily a general systemic infection, a bacteremia, but never a local condition under any circumstances. Since February, 1908, Wright has advocated the treatment of this disease by the deep muscular injections of mercury. Experience has led him to modify in some degree the dosage he first used and recommended. He says: Begin with grain 1/15 of mercury succinimid; give injections every other day; slowly increase the dose until a slight tenderness of the gums or a slight diarrhea is produced, then reduce the dose until these symptoms are overcome, and continue the injections until thirty have been given. Then give the patient a rest for two weeks; at the end of this interval of rest resume injections, using the dose used at the last previous injection, and continue on this dose as long as the patient continues to improve, up to thirty injections; if any untoward symptoms arise, or the patient does not appear to be doing well, reduce the dose, or alternate injections of mercury with injections of arsenious trioxid, gr. 1/30 and ferrous citrate, gr. 1/2, for a short time. Each series of injections should consist of thirty, with two weeks of rest intervening. As treatment progresses smaller doses of mercury are required. At the end of one year's treatment a rest of from 2 to 3 months should be given, when, if the patient is not cured, treatment should be resumed. As many patients with syphilis do not respond entirely to mercury but do better when this drug is combined with arsenic, so many patients with tuberculosis do better when arsenic is added to the doses of mercury.

Good results from this method of treatment have been obtained irrespective of what organ or tissue has shown local involvement. Of 83 patients treated by this method during 1908, 89 per cent. were improved, 7 of whom were cured. Of 24 cases of secondary ulcerative tuberculosis of the larynx, 20 were cured; the 4 remaining patients died within two months after admission, post-mortem showing in each case advanced lesions of practically all the organs, and yet in one of these the extremely marked ulcerative process in the larynx was completely healed. Four patients with general glandular involvement, 3 of whom had a suppurative process of the anterior cervical glands, were cured. One patient with tuberculous epididymitis was cured.

Northwest Medicine, Seattle

November

55 The Physician of To-day and his Relation to the Public. W. O. Spencer, Huntington, Ore.
56 *Resection of the Bladder for Malignant Disease. G. MacGowan, Los Angeles.
57 Conditions Simulating Bladder Tumors. G. S. Whiteside, Portland, Ore.
58 The Nasal Septum, its Strategic Position and its Baneful Influence on the Eyes and Ears when Deviated or Otherwise Deformed. Submucous Resection. F. W. Hilscher, Spokane.
59 Injury to the Knee and Ankle Joints. O. M. Jones, Victoria, B. C.
60 Epileptoid Conditions. W. T. Williamson, Portland, Ore.
61 The Doctor. E. H. Van Patton, Douglas, Wash.

56. Published in the *Southern California Practitioner*, November, 1909.

New York State Journal of Medicine, New York

November

62 Diagnosis of Pulmonary Tuberculosis. H. S. Goodall, Lake Kushaqua.
63 Management and Care of Tuberculosis. E. R. Baldwin, Saranac Lake.
64 Surgical Aspects of Tuberculous Lesions. E. A. Vander Veer, New York.
65 [illegible] cases. J. W. Stirling, Montreal.
66 [illegible] f Stomach and Colon as Aids in [illegible] A Helpful Sign in Chronic Appendi- [illegible] New York.
67 Early Diagnosis of Intestinal Cancer. I. S. Haynes, New York.
68 *Chronic Appendicitis as an Etiologic Factor in Other Conditions. H. J. Knickerbocker, Geneva.
69 *Psychoses Occurring During Pregnancy and the Puerperium. E. P. Ballintine, Rochester.
70 Habit and Diet in the Paroxysmal Neuroses. H. W. Hicks, [illegible]
71 [illegible] Concerning Insane Patients. G. W. [illegible]
72 [illegible] School. E. H. Long, Buffalo.
73 Roentgenology for the General Practitioner. D. R. Bowen, Rome.

68. **Chronic Appendicitis.**—In the routine examination of digestive patients by colon dilatation, Bastedo noted some three years ago, that acute pain or tenderness in the region of McBurney's point or dilatation of the colon regularly meant appendicitis. He has many cases in which the finding has been proved correct by operation, and in every patient operated on in whom the sign was positive, a diseased appendix has been found. He has a few cases thought to be appendicitis in which the sign was negative; in some of these from one to three years have passed without any appendix manifestations; in the others operation was performed and the appendix found normal. In no case with the sign negative was appendicitis found at operation. Bastedo asks all surgeons to employ this method so that its exact value may be determined, for it would seem to be especially useful in cases in which slight tenderness to finger point pressure at McBurney's point still leaves doubt as to the advisability of operation. Pain and tenderness are regularly brought out at the site of old abdominal operations, and occasionally in various parts of an abdomen that has not been operated on. Their occurrence in the same spot at repeated examinations suggests adhesions.

69. **Psychoses During Pregnancy and Puerperium.**—One thousand women have been systematically and individually studied by Ballintine in reference to the causes, symptoms and outcome of their insanity, and the findings carefully recorded. It was found that 457 of these women had borne children (including 5 illegitimate pregnancies). In 141, or 30 per cent. of these cases, the onset of the psychosis occurred during either gestation, the puerperium, or lactation. Agreeing with the results of similar studies recently made by others, Ballintine found that the study of the 141 cases taught that puerperal insanity, so-called, presents no characteristic or constant symptomatology or pathology. On the contrary there are several forms of insanity that may occur during the puerperium or during pregnancy and these are forms that occur as frequently in the non-puerperal as in the puerperal state.

Considered etiologically, the puerperium in many cases was only an exciting or determining cause of the mental breakdown in the predisposed. In other cases the real causes of the psychosis were due to some accident at childbirth, or some other intercurrent disease or infection. In still other cases childbirth was simply incidental to the psychosis.

The majority of cases of insanity occurring in women before the climacteric may be included in three large groups, namely—dementia præcox or the deteriorating psychoses; manic-depressive psychoses; and infective-exhaustive psychoses. Eighty-seven per cent. of the 141 women under consideration glided readily into these three well-known groups of acute insanities. Dementia præcox, the largest group, included 46 persons, four being admitted more than once, bringing the total admission up to 50. The manic-depressive psychoses included 33 persons, 35 admissions. The infectious exhaustive psychoses and allied forms included 38 admissions. Other forms included 20 admissions. Among the patients under consideration were a few in whom a careful study shows that some premonitory symptoms presented themselves before gestation, but the condition was not recognized and in nearly all of these women the puerperal condition of childbirth was believed to be the cause of the insanity, and so recorded in the medical certificate on which they were admitted to the hospital.

Dominion Medical Monthly, Toronto

November

74 The Action of Some Remedies in Myocardial Disease. V. E. Henderson, Toronto.
75 Repair of Injuries to the Pelvic Floor. A. C. Hendrick, Toronto.
76 Sixteenth International Congress of Medicine at Budapest. W. H. B. Aikens, Toronto.

Journal Missouri State Medical Association, St. Louis

November

77 *Internal or Direct Splint in the Treatment of Fractures. H. E. Pearse, Kansas City.
78 Eleven Cases of Epidemic Meningitis Treated with Flexner's Serum. D. L. Harris, St. Louis.
79 Accidental Opening of the Lateral Sinus. E. T. Senseney, St. Louis.
80 Treatment of Parenchymatous and Exophthalmic Goiters. E. G. Blair, Kansas City, Mo.

81 *Injury to the Heart. L. Rassieur, St. Louis.
82 Results with the Wassermann Reaction for the Serodiagnosis of Syphilis. J. W. Marchildon, St. Louis.
83 Acute Perforative Appendicitis with Recovery. H. C. Crowell, Kansas City.

77. **Internal Splint in Fractures.**—Pearse uses a steel splint or splice fastened with screws directly to the replaced fragments of the bone, as first advocated and employed by Lane.

81. **Injury to the Heart.**—The first case was a penetrating stab wound of the right ventricle. The wound penetrated the left pleural cavity. The pericardium could be felt but no puncture was found. A gauze plug was tightly forced into the wound to stop any bleeding. On account of great shock, radical procedure was deferred. The patient was almost pulseless; he was dyspneic. A dressing was applied; morphin sulphate, gr. 1/4, was given hypodermically once. Physiologic saline solution was given repeatedly hypodermically and by the rectum. Three days later, signs of a pyohemothorax were appearing. The left pleural cavity was almost entirely full of fluid. One inch of the sixth rib was removed in the left posterior axillary line. The pleural cavity was full of infected blood; a rubber drainage tube was introduced. The course now was one of empyema of the thorax. The patient grew gradually weaker and died seventeen days after the beginning of his trouble. From the postmortem findings it was evident that this was a case of penetrating wound of the right ventricle which would have healed without operation. Unfortunately death, caused by sepsis, intervened.

The second case was a non-penetrating gunshot wound of the apex of the left ventricle and of the margin of the left lung. An incision three inches long, parallel to the papillary line, was made extending through the gunshot wound. One inch of the fourth and fifth ribs was resected (one-half inch of the cartilaginous and one-half inch of the bony portion of the respective ribs).

Interstate Medical Journal, St. Louis

November

84 Investigation as to the Prevalence of Visual and Aural Defects Among the Public School Children of St. Louis County. A. E. Taussig, St. Louis.
85 Value of the Examination of Fresh Blood. S. Strouse, Chicago.
86 Improved Methods for the Examination of Sputum and Blood in Tuberculosis. F. T. B. Fest, Las Vegas, N. M.
87 Cutaneous Manifestations of Diseased Ductless Glands and the Application of Animal Therapy in Certain Skin Diseases. J. M. Winfield, Brooklyn.
88 Rheumatism in Young Children. D. E. Broderick, Kansas City, Mo.

Therapeutic Gazette, Detroit

November

89 A Second Season's Experience of Hypertonic Transfusions in Cholera Controlled by Observations on the Blood Changes. L. Rogers, Calcutta, India.
90 *Method of Curing Quickly [illegible] Sealing Argyrol in the Urethra. E [illegible] Ga.
91 Skin Grafting on Large Surf [illegible] Amsterdam, N. Y.
92 Methods Employed for the Relief of Organic Stricture of the Urethra in the Genitourinary Surgical Department of the Jefferson Hospital. O. Horwitz, Philadelphia.

90. **Method of Curing Gonorrhea.**—The treatment employed by Ballenger was described in *The Journal, Dec. 12, 1908,* page 2081.

Texas State Journal of Medicine, Fort Worth

November

93 Electricity in General Medicine. J. M. Martin, Dallas.
94 The Technic of the Radical Mastoid Operation. D. T. Atkinson, Dallas.
95 Use and Abuse of Cocain in Ophthalmology. R. H. T. Mann, Texarkana.
96 Is a Double Iridectomy Advisable in Primary Bilateral Glaucoma? W. D. Jones, Dallas.
97 Transient Myopia of Traumatic Origin. W. Ralston, Houston.
98 Trachoma. C. Joyes, Fort Worth.
99 Treatment of Chronic Trachoma. J. M. Woodson, Temple.
100 Bullet in Brain—Removal and Recovery. *R. M. Wickline,* Austin.
101 Surgical Corsets. B. C. Eskridge, Houston.
102 Relation of Infant Feeding to Future of the Race. L. B. Kline, Houston.
103 Antigonococcus Serum. H. C. Moore.
104 Pellagra in Colorado. U. I. Phoenix, Colorado, Tex.

Ohio State Medical Journal, Columbus

November

105 Myatonia Congenita of Oppenheim. W. B. Laffer, Cleveland.
106 *Phases of Sarcomata and their Removal. J. U. Barnhill, Columbus.
107 Complicated Case of Abdominal Pregnancy. M. Tate, Cincinnati.
108 Palliative Treatment of Prostatic Hypertrophy. A. J. McCracken, Bellefontaine.
109 Extension of Middle-Ear Suppuration Through the Internal Ear to the Brain. J. A. Thompson, Cincinnati.
110 *Multiple Myeloma: Report of Two Cases. G. F. Zinninger, Canton.

106. **Phases of Sarcomata.**—Of 11 cases reported by Barnhill only one could be called an early operation; in 4 there has been no sign of recurrence. The mortality is 63 per cent., the average life after operation being 16 months. In 3 of these cases the *x*-ray treatment was used—one patient has remained well for 5 years, another for 15 months, and the third is still under treatment. Barnhill is persuaded that without its use he should have had a recurrence in a case of sarcoma of the sacrogluteal region. He advocates the *x*-rays or the Coley toxins as supplements or auxiliaries of surgical measures. Of all patients operated on early, in the general line of cases as they come to the surgeon, probably not more than 25 per cent. remain permanently cured. These results could be greatly improved if cases were reported earlier and surgeons were prompt in operating in all suspected cases. Coley's statistics, including about 500 cases of inoperable sarcoma treated by the mixed toxins, show that 10 per cent. recover. This 10 per cent. is, of course, of the inoperable cases—uncured and uncurable, in all probability by any other means. Thus we have, with the combination of operative measures and the Coley serum, a chance to save about 35 per cent. Now, if, in addition to this, the *x*-ray treatment be employed, to prevent recurrence and complete the cures after excision, it is not improbable that we would be able to save another 10 or 15 per cent. of those affected with this type of malignant growth.

110. Abstracted in The Journal, May 22, 1909, p. 1688.

Washington Medical Annals

November

111 Cesarean Section—The Obstetrician a Specialist. J. T. Kelley, Washington, D. C.
112 Therapeutic Value of Ions. P. S. Roy, Washington, D. C.
113 Junod's Blood Derivations. G. Werber, Washington, D. C.
114 Syphilis of Liver and Other Organs. D. S. Lamb, Washington, D. C.
115 Anomalous Origin of the Right Subclavian Artery. W. G. Owen, Washington, D. C.
116 *Bacterial Inoculations in the Prophylaxis and Treatment of Typhoid. J. B. Nichols, Washington, D. C.
117 Case of Osteomyelitis. W. P. Carr, Washington, D. C.
118 Plastic Operation to Free Adherent Arm. E. M. Hasbrouck, Washington, D. C.
119 Epidemic Carcinoma of Thyroid in Fishes. H. M. Smith, Washington, D. C.
120 Dermoid Cyst of Testicle. W. P. Carr, Washington.
121 Congenital Telangiectasis of Arm and Forearm. L. A. LaGarde, Washington, D. C.

116. **Bacterial Inoculations in Typhoid.**—Eight patients were injected by Nichols after the method of Smallman, with from 1 to 4 large doses (150 to 600 millions) each, at intervals of several days, according to the course of the case. One case was complicated with wild delirium, one with intestinal hemorrhage and relapse, one with a relapse, two were prolonged to 31 and 33 days; aside from these, the cases were mild to moderate, and uncomplicated. There was no uniform effect of the injections on the temperature, and in most instances the temperature course seemed unaffected. Only one injection (300 millions) was followed by any notable local reaction or marked soreness at the site of inoculation. The reactions seemed less than would be expected after similar injections in healthy subjects. No bad results from the inoculations were apparent. No effect on the clinical conditions, in the way of either improvement or aggravation of the symptoms was definitely demonstrable. The patients *did very well,* but that may have been coincidental.

Three patients were treated by a different system—smaller doses at regular and frequent intervals—that is, 50 millions every other day. One was a mild case of 24 days, with a slight relapse. The other two were very ill on admission, and had prolonged febrile courses of 45 and 40 days; but the improvement in one of these cases was so satisfactory that if the injections could be credited with the result the usefulness of the treatment would be confirmed.

The results in the whole series are quite inconclusive. They probably show that typhoid vaccine, even in quite large doses, produces no harmful effects; but to what extent the favorable course in most of the cases was effected by the inoculations is indeterminate. Relapses certainly were not prevented.

Chicago Medical Recorder

November

122 Bismuth Paste Treatment of Tuberculous Sinuses. J. Ridlon and W. Blanchard, Chicago.
123 Sex Problems in Social Hygiene. W. T. Belfield, Chicago.
124 Housing in Illinois Cities. J. H. Tufts, Chicago.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

November 13

1 The Nation and the Tropics. W. Osler.
2 *An Improved Method of Removing the Testicle and Spermatic Cord for Malignant Disease. J. Bland-Sutton.
3 Typical and Fractional Pneumonia. Sir C. Allbutt.
4 *Radium in Treatment of Cancer and Some Associated Conditions. H. T. Butlin.
5 Brain and Mind. C. Mercier.
6 *Civilization in Relation to the Abdominal Viscera, with Remarks on the Corset. W. A. Lane.
7 Rhythmic Interrupters for Use in Electrotherapeutic Work. H. L. Jones.
8 Treatment of Chronic Ulcer of Leg. W. Evans.
9 Atrophic Paralysis of the Muscles of Both Hands and Forearms; Recovery. R. T. Williamson.
10 *Enumeration of Blood Corpuscles by Simplified Methods. R. Samut.
11 Simultaneous Fracture of the Patellæ. W. Sheen.
12 Large Vesical Calculus. Weighing 26¼ Ounces, Removed by Suprapubic Lithotomy; Recovery. W. W. Hearne.
13 The Plea of Lunacy in the Criminal Courts of Scotland. J. Glaister.

2. **Improved Method of Removing the Testicle.**—In a case of malignant disease of the testicle, Bland-Sutton determined to remove the testicle, the spermatic cord, with its arteries, veins, and lymphatics, and the associated lymph glands which lie on the inferior vena cava. The scrotum was freely incised and the right testicle was exposed and freed from its investments, and the spermatic cord was isolated as far as the internal abdominal ring. After much of the loose scrotal skin had been removed, the bleeding vessels were ligated with fine silk, and the testicle was enveloped in a fold of sterilized gauze. The second stage consisted in making a free incision of the right abdominal wall in the line of the linea semilunaris from the costal arch to the opening in the inguinal canal. The incision divided all the structures of the anterior abdominal wall, down to the peritoneum. Gentle tension on the testicle soon showed the position of the spermatic vessels lying in the loose areolar subperitoneal tissue. In order to isolate them, they were surrounded by a thin silk ligature just before their termination in the vena cava. The vas deferens and its artery were ligatured and divided at the brim of the pelvis.

At this stage the retroperitoneal tissues of the right lumbar region were well exposed and examined for enlarged lymph glands. Bland-Sutton found one on a level with the third lumbar vertebra, lying on the anterior face of the vena cava; although as large as a haricot bean it shelled out easily. A careful search was made for other lymph glands but without success. In spite of the large area of tissue opened up, there was little loss of blood, and the only vessels, apart from the spermatics, which required to be ligated were those divided in the scrotum and in the abdominal wall. The abdominal incision was closed by interrupted silk sutures, and the cut edges of the scrotum were brought together by sutures of thin silk. A narrow rubber tube was inserted into the depths of the wound for twenty-four hours. The wound was dressed with sterilized gauze and Gamgee tissue, held in position by a many-tail bandage, reinforced in the inguinal region by a spica bandage. Afebrile healing followed, with a rapid convalescence. The patient left the hospital on the seventeenth day after operation.

4. **Radium in Cancer.**—Butlin regards it possible by means of radium to promote the healing of epitheliomatous ulcers of very small extent, and to remove the induration around the ulcers. The cure of such conditions appears to be as satisfactory as the cure of rodent ulcers. In cases of epithelioma of any but the smallest extent we are not yet justified in advising patients whose disease is amenable to operation to try the effect of radium unless there are circumstances in the individual case which render an operation inadvisable. So far as associated affection of the lymph glands is concerned, Butlin has not yet seen anything which would warrant him in believing that the application of radium to the primary disease, even if it were successful, would avert affection of the glands, nor has he seen any case in which undoubted secondary affection of the glands was cured or decidedly benefited by the use of radium. Whether the application of radium over the glandular area before it is obviously affected will be found by-and-by to exercise a protective effect on the glands he does not know. At present the glands must be treated, as they have been hitherto, by operation.

The results which he has seen of the treatment of leucoplakia and allied conditions lead him to believe that radium only cures them by substituting thin scar-tissue for them, but does not restore the mucous membrane to the condition it was in before the development of the disease. Treatment by means of radium in such cases has, however, the great advantage over surgical removal or the use of destructive agents in that it is quite or almost painless, and that no actual inflammation and no open sore are produced by the applications when they are made by experienced operators.

6. **Abdominal Viscera and Corset.**—Lane calls attention to the disadvantage that the individual experiences from the habit of keeping the trunk constantly erect. The erect posture affects men and women differently, for the reason that the abdomen of a woman is relatively much longer than that of a man, while the female pelvis and thorax differ materially from the male. The abdominal wall of the woman is also rendered less efficient by pregnancy and by the support afforded by her dress. When the trunk is erect, there exist tendencies to the downward displacement of the viscera contained in the abdominal cavity. The several viscera are influenced by this tendency in a varying degree in proportion as they themselves vary in weight. The mechanics of the abdominal wall are such that the muscles exert a firm pressure on the viscera and tend to prevent their downward displacement. Still, in the abdomen, as well as in the body generally, the anatomy is so arranged that there must be a suitable relationship between the attitudes of activity and those of rest, or, in other words, that the erect posture, in which the viscera tend to drop, must be alternated sufficiently with a position in which all strain is taken off the viscera and the tendency for them to drop is in abeyance. This latter may be obtained by the assumption of the recumbent or of the squatting posture. In the former the viscera tend to displace upward by their own weight, while in the latter they are forced upward by the forcible apposition of the thighs.

This falling of the viscera leads to all sorts of disturbances —more or less annoying—and of more or less serious import. Lane says that the corset has not received the attention it deserves, so that by far the most important factor in the treatment of intestinal stasis and of its effects has been left in abeyance. He urges its therapeutic value on the medical profession as being the most effectual means by which the trouble to which he has called attention may be avoided or mitigated.

10. **Enumeration of Blood Corpuscles.**—Samut uses the Blenden-ocular "Ehrlich." With this instrument enumeration of corpuscles is done as follows: The drop of blood is obtained and diluted in the Thoma-Zeiss pipette and blown out onto the Thoma-Zeiss ruled slide in the usual way. When this has been placed on the microscope, five minutes are allowed to elapse. A No. 9 Leitz objective and a Blenden-ocular are used, the slit being so adjusted by means of the little knob that four squares of the central platform of the counting chamber just coincide with it. The red corpuscles are counted and the preparation may now be shifted as many times as desired, each count representing the number of corpuscles in four squares, since the slit corresponds exactly to four of the squares. The total number obtained after several such counts being divided by the number of counts gives the number of red corpuscles per field of four squares; hence division by four

gives the number per square. This number multiplied by 4,000 would represent the number of corpuscles per cubic millimeter were it not that the dilution has to be taken into account, and accordingly the result must be multiplied by 100 or 200.

Again, the Blenden-ocular may be used for the purpose of counting the leucocytes in the following manner: A dry film preparation of the blood to be examined is fixed and stained by Leishmann's or Jenner's stain. Using a No. 9 Leitz objective and a Blenden-ocular the red and white corpuscles are counted, the shutter of the ocular being at one-half or one-quarter of the total field of vision. The count is made several times through the same slit and an average of corpuscles to the field is obtained.

British Medical Journal, London

November 13

14 Present Position of the Neurone Doctrine in Relation to Neuropathology. F. W. Mott.
15 *General Spinal Analgesia. T. Jonnesco.
16 The Departmental Committee on Humidity and Ventilation in Humid Cotton-Weaving Sheds. M. D. O'Connell.
17 *Classification of Cases of Pulmonary Tuberculosis. W. R. Huggard.
18 Acute Lupus Erythematosus. F. Beetham and F. W. Eurich.
19 Henoch's Purpura. L. Day.

15. This subject was discussed fully in The Journal, Nov. 27, 1909, page 1831, in the Department of General News.

17. **Classification of Pulmonary Tuberculosis.**—Huggard estimates numerically the extent, the intensity and the duration of the disease from 1, the lowest grade, to 5, the highest, except that the highest grade of intensity must be taken to range from 5 to 10, so as to include excessively acute or fulminating cases. The sum of these figures will indicate the class in which the case is to be placed:

Extent: *Amount of tubercle in the lung.* E^1 = Not more than 1/20 of the volume of one lung, whether in one spot (massive), or distributed throughout both lungs (scattered). E^2 = Not more than 1/10 of the volume of one lung, whether in one spot (massive), or distributed throughout both lungs (scattered). E^3 = Not more than 1/5 of the volume of one lung, whether in one spot (massive), or distributed throughout both lungs (scattered). E^4 = Not more than 3/10 to 5/10, or roughly, ⅓ to ½ of the volume of one lung, whether in one spot (massive), or distributed throughout both lungs (scattered). E^5 = Not more than 6/10 to 10/10, or roughly ⅔ to 1, of the volume of one lung, whether in one spot (massive), or distributed throughout both lungs (scattered).

Intensity: All the conditions named under one heading need not be present at the same time. I^1 = Sluggish, with little or no rise in temperature or other general symptoms. Only slight, if any, hemoptysis. Physical signs of active disease slight, just detectable. I^2 = Slight pyrexia and night sweats; moderate loss of appetite and of strength. Physical signs of moderate activity. Bronchial catarrh, if present, slight in amount, and restricted to the area of the tubercle. I^3 = Moderate fever and night sweats; seriously impaired health; loss of strength and weight. Hemoptysis, if present, followed by continued pyrexia. Physical signs of softening or of cavity formation. Bronchitis, if present, more marked or more diffused in I^2. Recent tubercle if elsewhere than in lungs, very slight. I^4 = Grave constitutional disturbance—more pronounced than in I^3. Physical signs of greater activity. Bronchitis, if present, more marked or more diffused. Tubercle if present elsewhere, more active than in I^3. I^{5-10} = Very serious illness. Physical signs more active still. Bronchial catarrh more pronounced or more diffused. Acute or fulminating phthisis.

Duration: D^1 = not over 3 months; D^2 = not over 6 months; D^3 = not over 1 year; D^4 = not over 3 years; D^5 = over 3 years.

Clinical Journal, London

November 10

20 The Treatm [illegible] Special Reference to Mistakes tha [illegible] C. M. Moullin.
21 Abdominal [illegible]
22 *Concerning [illegible] to a Method of Lessening Some of [illegible] E. Burton.

22. **Cough.**—The method referred to by Burton may be briefly described as "discharging" cough without closing the glottis, that is, by maintaining the glottis open from the first stage onward. So that when thus performed cough should consist of (1) a forced but not considerable inspiration made through the nose, the lips being closed; and followed (without closure of the glottis and without pause) by (2) a forced expiration through the mouth. Burton terms this "open" cough.

Medical Press and Circular, London

November 3

23 Suppuration in the Accessory Nasal Sinuses. J. Donelan.
24 Hematemesis and its Surgical Treatment. W. Taylor.
25 Removal of the Normal Appendix. H. A. Ledlard.
26 Quackery Law. G. F. Darker.
27 The Ethics of Journalism in Relation to Quackery. H. Sewill.

Journal of Tropical Medicine and Hygiene, London

November 1

28 Hydatid Cyst of the Left Ventricle. Hydatid Disease in the Anglo-Egyptian Sudan. J. B. Christopherson.
29 *Burmese "Htone Na": A Peripheral Neuritis of Malarial Origin. L. G. Fink.

29. **Burmese "Htone Na."**—The object of Fink's communication is twofold: First, to establish the fact that certain forms of peripheral neuritis are of malarial origin. Second, to show in what respect these cases of malarial peripheral neuritis differ from cases of beriberi. In all cases, with one exception, seen by Fink, there was a history of repeated attacks of ague. In the majority there had been some enlargement of the spleen. In some cases the symptoms came on gradually, in others suddenly, usually after a bout of malarial fever or exposure to damp or cold.

Signs and Symptoms: Fever.—Usually there is a previous history of ague, but there may be no abnormal temperature when the neuritis supervenes. Parts affected: usually the lower extremities; sometimes upper extremities as well. The distribution is usually symmetrical.

Knee reflexes: In the early stage this has been noticed to be markedly increased, but later this is entirely lost. This happens also in beriberi. Electric reactions were not tested. Anesthesia varies in extent and degree, but is usually best marked over the front and inner aspects of the legs. Hyperesthesia of skin was not noted. The patients in the early stages usually complain of burning or shooting pains, "pins and needles," or a feeling of numbness. This may affect the lower or upper extremities, chiefly the former. Pinching the skin over the affected part usually causes no pain. Hyperesthesia of muscles is always present. Muscular wasting is very marked in severe cases. The muscles become flabby. Paresis varies as in beriberi, and may go on to complete paralysis with atrophy of muscles. Edema is usually slight, sometimes entirely absent, and, as a rule, is confined to the region of the ankles. Epigastric tenderness or uneasiness at the pit of the stomach has not been observed before or after the neuritis supervened. Furthermore, obstinate vomiting does not occur in malarial neuritis as in some cases of beriberi.

Condition of heart is normal in malarial neuritis; there is no acceleration of the pulse, no palpitations, no cardiac murmurs as in beriberi. Hence, there are no sudden deaths from malarial neuritis as in beriberi. Dyspnea does not occur in the dry variety of malarial neuritis, however severe the case may be. Alteration of voice was not noticed, whereas in beriberi the voice is said to be very hoarse. Mental disturbances are exceedingly difficult to test in native patients. The mental disturbances caused by malarial toxemia are sometimes very severe, and cases of insanity from this cause have been recorded. Optic neuritis and even complete blindness have been known to follow severe attacks of malarial fever.

From the facts noted above it will be seen that while there are many points of similarity between cases of malarial neuritis and beriberi, there are important differences, and these are attributable to the selective influence of the poisons in each case, notably to the affection of the vagus nerves in beriberi and not in malarial neuritis.

Glasgow Medical Journal

November

30 The Doctrine of Inflammation. R. Muir.
31 Pyelitis Complicating Pregnancy and the Puerperium. W. D. MacFarlane.
32 Pregnancy with Kidney Complications. J. Craig.

Annales de Gynécologie et d'Obstétrique, Paris

October, XLVI, No. 10, pp. 577-656

33 *Treatment of Puerperal Infection. A. Pinard.
34 Appendicitis and Diseases of the Adnexa. (L'appendicite et les maladies des annexes.) P. Segond.
35 *Kidney Operations. (Quelques reflexions à propos de 265 opérations rénales.) H. Hartmann.

33. **Puerperal Infection.**—Pinard presents in tabulated form the details of his obstetric service since 1882; the 10 tables and curves giving an instructive oversight of the results of the application of the technic he prefers. During the 26 years there were 58,213 childbirths, the total mortality in the first series of 12,580 being 0.75 per cent. and in the later series of 45,633, 0.44 per cent. His leading principle is that the parturient should be aseptic as also everything that touches her. In order to ensure this he concludes the general and local toilette with vaginal injection of an antiseptic, covering the parts with cotton thereafter. A similar vaginal injection is made at once after expulsion of the fetus and another after the third stage of labor. If there is suspicion of a chance for infection, antistreptococcus serum is injected and an intrauterine injection is given. He approves of curetting with thick fetid lochia but not otherwise, and regards it as dangerous when applied tardily. His curves show the apparent harmlessness of antistreptococcus serum while it seems to increase the resisting powers in streptococcus infection. He has gradually increased the dosage, now injecting 40 c.c. morning and night for 3 days or until all symptoms have vanished. A number of the women thus received from 300 to 600 c.c. and always, he says, to their great benefit. The morbidity has dropped from 25.76 to 5.64 per cent. since 1890, the total mortality from 0.72 to 0.18 per cent. It was only 0.03 per cent. in the 3,028 deliveries in 1907.

35. **Kidney Operations.**—Hartmann performed nephropexy in 31 cases but found that certain patients continued to suffer as before; the disturbances had evidently been of nervous origin or merely one element in multiple ptoses. Intermittent attacks of retention of urine, however, are an important indication for operative measures. In 57 cases of tuberculosis of the kidney, favorable results were attained by nephrectomy, but tuberculous epididymitis developed later in 2 out of the 15 men nephrectomized, another succumbed in less than 3 months to tuberculous meningitis and in several concomitant pulmonary lesions continued to develop. In some of the 42 women an existing pregnancy continued its course apparently unaffected by the nephrectomy. Only 4 of 11 patients with kidney stones and pyonephrosis recovered completely after a conservative operation; a fistula persisted in the others necessitating secondary nephrectomy. The mortality was 13.3 per cent. in 15 nephrectomies done for cancer; the first symptoms had been observed 3, 5 or 12 years before in a number. None of the patients has passed 4 years without recurrence; in several the recurrence developed after the third year.

Archives de Médecine des Enfants, Paris

October, XII, No. 10, pp. 721-800

36 *Recurrent Vomiting in Children. (Vomissements cycliques chez les enfants.) L. Comby.
37 *The Neck Sign in Meningitis. (Signe de la nuque. Signe nouveau sur les membres inférieurs dans les méningites chez les enfants.) J. Brudzinski.
38 Milk for City Children. (Fourniture en masse aux nourrissons d'une nourriture convenable.) E. Deutsch.
39 *Pyelitis and Pyelonephritis as Complications of Measles. (Pyélites et pyélonéphrites comme complication de la rougeole.) M. de Biehler.

36. **Recurrent Vomiting in Children.**—Comby refers to recurring attacks of uncontrollable vomiting lasting for one or several days, observed generally in children between 2 and 6, who are apparently entirely well during the intervals. This singular syndrome has not attracted much attention until the last 10 years, he says, but a good description of it was published by Gruère as early as 1838. Comby himself has encountered 104 cases; 54 in girls. In 6 cases, 2 or 3 members of the family were affected. A neurotic-gouty family history was evident in 62 cases. Preceding dyspeptic disturbances were frequently encountered as also a history of some infectious disease, but appendicitis is one of the most frequent causes: liver trouble and acetonemia are more dubious factors. In the 10 fatal cases on record fatty degeneration of the liver and certain gastrointestinal lesions were encountered, but the appendix was not examined in all. The attack comes on suddenly as a rule, the vomiting continuing for one or three days, or even from eight to ten days. Obstinate constipation is the rule with great prostration, and sometimes there is vague abdominal pain. There may or may not be fever; sometimes it is very high. Coincidence or succession of migraine in some cases is mentioned. He found appendicitis in 50 per cent. of his cases, and regards appendicectomy as the best means to put an end to this recurring vomiting. Medical treatment consists in alkalines to combat the evident acid intoxication, giving from 30 to 60 grains of sodium bicarbonate a day. In prophylaxis he advises a vegetable diet, out-of-door life and general hygiene. During an attack nothing should be given by the mouth, and lavage of the stomach may arrest the vomiting. Morphin is a valuable aid, with saline infusion to restore the needed fluids. The diagnosis has generally wavered between indigestion, poisoning, migraine, meningitis, intestinal obstruction, peritonitis and appendicitis. In 3 of his cases the vomiting recurred even after appendicectomy. In prophylaxis he has frequently derived benefit from a powder containing 0.25 gm. each of calcined magnesia, benzonaphthol and sodium bicarbonate with 0.01 gm. pulverized nux vomica. One of these powders is taken before 2 meals for 10 days and then a wineglassful of Vichy water in their place for 10 days, after which the powders are resumed. This kept up systematically seems to relieve and ward off recurrence unless the trouble is due to the appendix. A simple indigestion or poisoning rarely induces such severe and incessant vomiting. He summarizes the details of his 104 cases. The vomiting recurred every month in some, every four months or more irregularly in others. An acid and chloroformic odor of the breath just before or during the attacks was noticed in a large number of the cases. He quotes extensively from American writers, especially J. P. Crozer Griffith in *American Journal of the Medical Sciences*, 1909, cxx, 553, who also reports a case in which the attacks recurred after removal of the appendix. In 2 of the 4 cases mentioned the children succumbed.

37. **New Sign in Meningitis in Children.**—Brudzinski's previous announcement of the value of the contralateral reflex as a sign of meningitis has been confirmed by his later experience in 17 cases of tuberculous meningitis and 6 of the epidemic variety. He now announces a sign which is even more constant in meningitis than the Kernig and Babinski signs, having been encountered in all but one of 48 cases of meningitis of various etiology, and this exception was in a moribund child. He discovered the sign accidentally in testing for rigidity of the back of the neck; as he tried to bend the neck he noticed flexure movements in the ankle, knee and hip joints. In one child with pneumonia the positive findings with this neck sign cast doubt on its specific nature until further signs of meningitis developed and lumbar puncture gave issue to a purulent fluid containing pneumococci. Increased pressure on the brain is not enough alone to induce this sign as it is absent in hydrocephalus and other abnormal brain conditions.

39. **Kidney Complications of Measles.**—Biehler declares that the fact that complications on the part of the kidneys are so seldom encountered with measles is because no one thinks of looking for them. She, however, has found pyelitis or pyelonephritis in 9 out of 147 cases of measles and albuminuria in 59 others. In some cases the absence of anything else to explain the persisting high fever first led to examination of the urine with resulting discovery of the kidney complication. Nephritis was discovered in a tenth case of mild measles. All but 2 of the 10 children were girls, and the kidneys were known to have been previously healthy. The children all recovered in less than six weeks but in one case nephritis occurred again during an attack later of scarlet fever.

Revue de Médecine, Paris

October, XXIX, No. 10, pp. 673-752

40 Blastomycetic Infection. (Mycose de Gilchrist, blastomycose ou oidiomycose des Américains. I.) L. Laederich and H. R. Duval.
41 *Prolonged Treatment of Epilepsy with Bromid and Deprivation of Salt. E. Long.
42 Two Cases of Sclerosis of the Kidney, of Tuberculous Origin. (Les scléroses rénales d'origine tuberculeuse.) A. Moulonguet and V. Courtellemont.

41. **Treatment of Epilepsy.**—Long reports 7 years' experience in treatment of epilepsy by giving bromids while reducing the intake of salt. He expatiates on the necessity for (1) careful dosage of the bromids as their action is much enhanced under these conditions; (2) exact determination of the amount of salt still permissible; (3) most appropriate form of salt-free diet, and (4) the influence of this diet on the general health. His conclusions emphasize the importance of this method of treating epilepsy as the patients bear it well and it can be kept up indefinitely without harm. In the past, some of the accidents ascribed to bromid intoxication, he suggests, may have been due to the enhancing of the action of the bromid by the patient's casually and unintentionally ingesting less salt than usual, as when, for instance, his diet included more milk. On the other hand, if he happened to eat more salted food than usual, the action of bromids being taken at the time would be correspondingly reduced. The combination of a salt-free diet with bromids given for their sedative action in other affections may prove a valuable innovation in all fields of therapeutics. Long gives the details of 4 typical cases of severe epilepsy in which this treatment was kept up for years with great benefit, the patient being under observation for more than 7 years.

Beiträge zur Geburtshilfe und Gynaekologie, Leipsic

XIV, No. 3, pp. 341-516. Last indexed September 11, p. 901

43 *High Forceps. (Zur Frage der Wertigkeit der hohen Zange.) F. Miescher.
44 Conditions in the Pelvis with Congenital Dislocation of the Hip-Joint. (Beitrag zum Luxationsbecken.) O. Henrich.
45 *Febrile Childbirths and the Prognosis for the Puerperium. (Fieberhafte Geburten und deren Wochenbettsprognose.) E. Wirz.
46 Case of Encephalocystocele. (Hydromeningocele aus einer Encephalocystocele hervorgegangen, mit congenitalen Hautdefekten. Verhorntes geschichtetes Pflasterepithel im Amnion.) A. Sitzenfrey.
47 *Predetermination of Sex of Offspring B
Determination of the Sex During the
mung des Geschlechts am menschlicher
tung und während der Schwangerschaft.) Otto Schöner (Rottach am Tegernsee).
48 *Histology and Etiology of Sacral Tumors.* E. Eiche.
49 Unusual Case of Incarceration of Gravid Retroflexed Uterus. A. Rosenberger.
50 Influence of Castration in Osteomalacia. M. Ogata.
51 Blood-Pressure in Pregnant and Parturient Women. (Blutdruckmessung bei Schwangeren, Gebärenden und Wöchnerinnen.) Sakurai.
52 Case of Polypous Uterine Sarcoma. J. Bäcker and K. Minich.

43. **The Expediency of High Forceps.**—Miescher has been able to find records of 484 childbirths in which extraction was by high forceps, and by comparing the immediate and ultimate outcome he seeks to determine the relative rank of this method of delivery. The list includes 26 deliveries with normal and 25 with contracted pelvis at the gynecologic clinic at Basle, which he reports in detail. The principle for the application of high forceps, he affirms in conclusion, is that it is the last resource of expectant treatment before perforation; he prefers it in the interests of the mother to a pelvis-enlarging operation. Consequently the forceps should be applied without force, tentatively, ready to proceed, in the home, to perforation or, in the hospital, to conservative Cesarean section or pubiotomy at need. The mortality of 30 per cent. among the children should not deter as, in the home, 70 per cent. of the children are delivered alive who otherwise would have succumbed to perforation.

45. **Febrile Deliveries and Prognosis for the Puerperium.**—Wirz reports from von Herff's clinic at Basle 212 febrile deliveries, about 52 per cent. in primiparæ. The outcome of the cases was the more favorable, the more conservative the management of the childbirth. The main cause for the fever is the premature rupture of the membranes; on this depend all the other phenomena observed. The more protracted the birth after rupture of the membranes, the worse the prognosis; it may be regarded as fatal if the febrile labor extends over several days. The height of the fever is no criterion as to the ultimate outcome. A persistently high pulse rate, even with relatively slight fever, is serious ground for alarm, especially when the temperature subsides as the pulse increases. Operative interference renders the outlook still graver; it should be considered only when tympany of the uterus and other signs indicate severe infection. Under all other conditions, spontaneous delivery seems to offer the best prospects for both mother and child

47. **Predetermination of Sex.**—Schöner has had access to a parochial register which records the dates of births in 315 families for nearly 100 years, a total of 1,615 children. Comparison of the details recorded here with his own experience and results of his observation has enabled him to form a theory, based on arguments which he relates in detail, to the effect that the sex of the ovum is already decided at conception, and that each ovary produces three ova in succession, two of the same sex, the third of the opposite sex. The other ovary then takes up the task and produces in turn its two ova of the same and one of the opposite sex. The functioning ovary is tender, and this tenderness persists all through the pregnancy and even a little beyond. It is thus possible, he believes, to determine the sex of the fetus by computing the number of menstruations between two conceptions.

Medizinische Klinik, Berlin

October 31, V, No. 44, pp. 1653-1692

53 *Nature and Treatment of Asphyxia in New-Born Infants. (Wesen und Bekämpfungsmethoden der Asphyxia neonatorum.) C. Hoerder.
54 Disturbances in the Sympathetic System and Their Relation to Psychoneuroses. J. Kyrl. Commenced in No. 43.
55 Autoserotherapy in Serofibrinous Pleurisy. S. Szurek.
56 *Operation for Felon. (Zur Technik der Panaritiumoperation.) S. Kofmann.
57 Transmission of Acute Anterior Poliomyelitis to Monkeys. (Experimentelle Uebertragung der Poliomyelitis anterior acuta auf Affen.) W. Knoepfelmacher.
58 *Chronic Influenza. F. Franke.

53. **Asphyxia of the New-Born.**—Hoerder explains asphyxia of the new-born as the result of intrauterine stimulation of the respiration center by deprivation of oxygen from some interference with the circulation during the birth process. As the respiration center is thus stimulated, the fetus makes a breathing movement and this draws amniotic fluid into its air passages so that normal respiration is impossible when it finally emerges into the air. The spasmodic breathing movements that follow strong stimulation of the respiration center from lack of oxygen cause the aspirated substances to be drawn unusually deep into the air passages, as in drowning, and this is the cause and danger of asphyxia neonatorum. He warns that a sudden jet of cold water has been known to arrest the respiration even in health. Alternation of friction and dipping the child into cold and warm water are more to be advised. The stimulation from the air has also an influence, the tender skin of the new-born infant probably sharing in the respiratory process. He commends Ogata's modification of the Schultze method and Prochownik's method (the former was described in THE JOURNAL, Dec. 14, 1907, page 2044, and Volland's method, Oct. 2, 1909, page 1140), declaring that perseverance is liable to be rewarded with success even after hours. When he was a student, an infant in asphyxia was given up by the obstetrician in charge after prolonged efforts at revival had proved unavailing, but after he had left the room the students took the supposedly dead infant out of the crib to continue their practice of the Schultze swinging which they did not strive to make particularly gentle; in the hands of the third student the child was found to be alive.

56. **Treatment of Felon.**—Kofmann commends the method of incising along the tendons but never over them, reaching them from the side and never cutting into the joint if he can avoid it. He supplements this single incision with a crescent-shaped incision around the base of the nail, distant about 3 mm., cutting down to the bone. This prevents injury of the sensitive tip of the finger and deformity of the joint.

58. **Chronic Influenza.**—Franke ascribes to chronic influenza a number of common ailments which are generally regarded as pure complications and intercurrent affections, but which he thinks are due to the persistence of the influenza infection. The list includes tedious bronchitis, asthma, bone and joint affections, conjunctivitis, neurasthenia and catarrhal affections of various kinds both of the respiratory and gastrointestinal passages. The recurrence or persistence of influenza is frequently styled "mere cold," but every acute influenza, he affirms, should be regarded and treated as a serious illness and every effort made to cure it completely to prevent its persistence in a chronic form. If in any way possible, the

patient should stay in bed and not try to fight the infection, particularly if there is much prostration. In nothing else is it so important to refrain from drafts and getting chilled: the body is incredibly sensitive to these factors during influenza infection, more objectively than subjectively. The patients "catch cold" even in dressing, and in some cases every chilling is followed by aggravation of the state of the blood, aspect and general condition. In some cases he has been able to transform the ailing patient completely by housing him in a warm room for three or five months. One of his own children had *influenza* twice before the age of 2, once followed by paralysis of the legs for three months and attacks resembling angina pectoris, the pulse dropping to 60. The child did not grow robust until he was kept in the house, protected against chilling, for four or five months for two consecutive winters. He warns his *influenza patients:* "Beware of getting chilled sitting, lying or standing," but he commends exercise, warmly clad, in almost any weather. Another peculiar feature of influenza is the extreme sensitiveness of the skin to mechanical injury. Complete rest of body and mind aids materially in the cure of bone and joint and other affections of influenzal origin. Bromids are indispensable in the nervous form but iron and quinin do not benefit as the apparent anemia is really a neurasthenic pseudo-anemia; arsenic is the main reliance. He has frequently been amazed at the improvement on a mixture of 5 gm. Fowler's solution, 10 gm. tincture nux vomica and 15 gm. tincture valerian, of which 10 drops are taken in a large glass of water after meals. The dose is increased by one drop until 30 drops are being taken three times during the day. This is kept up for a month or two and then gradually reduced. Very hot brief baths are less debilitating than other forms of bathing in these cases and help in the toughening process. The raspberry tongue is characteristic of chronic influenza; the papillæ on the front of the tongue being red and swollen. A red stripe on the anterior pillars of the fauces is also characteristic during an acute attack and during acute exacerbations.

Münchener medizinische Wochenschrift

October 26, LVI, No. 43, pp. 2201-2248

59 *The Functioning of Diseased Kidneys. (Funktion kranker Nieren.) K. Schlayer and Takayasu.
60 Leech Extract in Treatment of Eclampsia. (Bedeutung des die Therapie der Eklampsie.) F. ide.
61 (Ueber die Kobragift aktivierende licher Blutseren und über den Mechanismus der Kobragifthämolyse.) W. Beyer.
62 *Serotherapy and its Dangers. (Ueber Serumbehandlung und ihre Gefahren.) E. Scheidemandel.
63 Demonstration of Tubercle Bacilli in the Blood. (Zum Nachweis der Tuberkelbazillen im strömenden Blute der Phthisiker.) A. Lippmann.
64 Possibility of Transformation of Human into Bovine Tubercle Bacilli. (Weitere experimentelle Beweise für die nahe Verwandtschaft der beim Menschen und beim Rinde vorkommenden Tuberkelbazillen und die Möglichkeit einer Umwandlung menschlicher Tuberkelbazillen — Typus humanus—in rindervirulente Formen—Typus bovinus.) A. Eber.
65 New M tic Ferments and Antif
66 *Milk turbances. (Zur Ther und der Dyspoреunie.) C. J. Bucura.
67 Designation of Tuberculin Dosage. (Zur Bezeichnung der Tuberkulindosen.) Weinberger.
68 Te n Section and After-Care. beim extraperitonealen nischen Bemerkungen zu dieser Operation.) F. R. Brewitt.
69 Dangers of Tamponing Nasopharynx. (Gefahren der Tamponade des Nasenrachenraumes.) O. Mayer.
70 *Postoperative Duodenal Ileus. C. Weinbrenner.
71 Apparatus for Automatic Fixation and Embedding of Microscopic Specimens. G. Arndt.

59. **Functioning of Diseased Kidneys.**—Schlayer publishes the results of experimental research which show that the elimination of certain substances is exclusively the task of the tubules or of the vessels. Salt is evidently eliminated by the convoluted tubules and the elimination proceeds undisturbed, so long as they are intact, no matter how much the kidney may be diseased otherwise. On the other hand, lactose seems to be eliminated exclusively by the vessels so that the elimination proceeds unmodified by disease of the tubules. The experiments were made with salt, lactose and potassium iodid. The latter behaved like salt in these experiments. About 150 series of researches were made on rabbits; the nephritis was induced with chromin, aloin, corrosive sublimate or uranium, to act on the tubules, and with cantharidin or arsenic to act on the vessels. The result of this research demonstrates that there are two kinds of hyposthenuria, as he calls the excretion of abnormally thin urine. When the tubules are diseased the solid elements are unable to pass into the urine. When the vessels are unusually irritable they respond to the slightest stimuli by throwing off large amounts of water. This dilutes the urine but the solid elements are eliminated as usual, only more diluted. It is thus possible to distinguish between tubular and vascular hyposthenuria.

62. **Serotherapy and Its Dangers.**—Scheidemandel discusses the condition known as anaphylaxis, allergy or hypersusceptibility, and warns that the experiences to date show the possible peril with serotherapy. It should be restricted to cases in which it is absolutely necessary, and the patient's susceptibility should be determined, with minute doses first. Before giving the serum, inquiry should be made as to whether the patient has ever used it before. Scheidemandel thinks that it is possible that curative serums derived from monkeys may be better suited for clinical use than horse serum. He reports a case of severe collapse after a third injection of antistreptococcus serum given on account of a febrile osteomyelitis of the pelvis. These anaphylactic phenomena have been observed as late as three years after the first injection.

66. **Organotherapy of Climacteric Disturbances.**—Bucura suggests the use of milk from cows in heat as a form of organotherapy of climacteric disturbances. He is theoretically convinced that such milk contains exceptional amounts of the internal secretions of the ovaries, and that it might be possible to prevent disturbances from castration if such milk were systematically taken.

70. **Duodenal Ileus.**—Weinbrenner urges that more attention should be paid to postoperative duodenal ileus as it is so easily remedied. The syndrome is apparently that of perforation peritonitis with a stormy onset, but all disturbances subside if the patient assumes the ventral or the knee-elbow position. This relieves the mechanical trouble causing the disturbances. The possibility of this mechanical ileus should be borne in mind in every case of persisting postoperative vomiting of bile.

Wiener klinische Wochenschrift, Vienna

October 21, XXII, No. 42, pp. 1431-1468

72 *Suture of Vessels in Man. (Gefässnaht am Menschen.) E. Ranzi. (Arteriennaht.) J. Gobiet.
73 Seroreaction with Echinococcus Cysts. (Blutserumprobe bei Echinokokkuszyste.) A. Jianu.
74 Disappearance of Seroreaction in Syphilis, and Other Disputed Points. (Ueber das Schwinden der Wassermann-Neisser-Bruckschen Reaktion bei syphilitischen Erkrankungen und einige strittige Punkte derselben.) W. Jaworski and S. Lapinski.
75 *Glycosuria and Pregnancy. (Glykosurie und Schwangerschaft.) M. Reichenstein.
76 Influence of Famine Years in Finl culosis. (Einfluss von Notjah häufigkeit sowie die Latenz der der Kassationen beim finnischer

October 28, No. 43, pp. 1469-1506

77 *Pancreatitis. P. Albrecht.
78 Changes in Pancreas with Glycosuria. (Ueber Veränderungen des Pankreas bei Zuckerkranken unter Berücksichtigung ätiologischer Momente und des klinischen Verlaufes.) A. v. Halasz.
79 *Vaccine Treatment of Skin Diseases. (Die aktive Immunisierung bei Akne, Furunkulose und Sykosis.) J. Sellel.
80 Cutaneous Reaction to Electrolytic Administration of Tuberculin. (Auftreter r elektrolytischen Einführung von
81 *Removal of Hypopl Nose. F. Smoler.

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97 *Collective Inquiry in Regard to Cancer in Denmark. J. Fibiger.

96. **Action of Gastroenterostomy.**—Pers reports the results of Roentgen examination of 40 patients from a few months to six years after gastroenterostomy to determine its ultimate action. He found that the stomach emptied itself in from 10 to 25 minutes in 9 cases; in from 20 to 50 minutes in 15, and in about 90 minutes in 15. The gastroenterostomy thus answered its purpose of rapid draining away the contents of the stomach in nearly every case, and this effect was obtained whether the pylorus had previously been permeable or not. He gives typical skiagraphs of the findings and of the two exceptions in which the pylorus evidently participated in the evacuation of the stomach; in one of these there were still dyspeptic disturbances. The new opening had either become obstructed or the stomach musculature was too weak, so that the evacuation of the stomach proceeded more as under normal conditions.

97. **Report of the Danish Cancer Research Committee.**—Fibiger states that 1,668 question blanks were sent to medical men throughout Denmark; 144 reported that they were no longer practicing, but all the others, with 11 exceptions, filled out the question blanks with scrupulous care. Microscopic findings were mentioned in 35 per cent. of all the cases of cancer. Only 620 physicians had cancer patients in their charge on the day selected for the enquiry, April 1, 1908. Dropping a few duplicate cases, the number of known cancers in charge of physicians was 1,138 in a population of 2,650,000, that is, 0.43 per thousand inhabitants. This proportion is a little larger than is reported elsewhere, but may be due to more precise records. The proportion of cancer patients in the cities was somewhat larger than in the rural districts, three times as many uterine cancers being reported in the cities than in the rural districts, while gastric cancer is more frequent in the country. About 92 per cent. of the women with uterine cancer and 64 per cent. with mammary cancer

had borne children. The fact that 23 of 112 male patients with gastric cancer were alcoholics, and 7 of 16 with cancer of the esophagus and 4 of 11 with cancer of the liver, suggests liquor as a causal factor, but there is no history of liquor drinking among the 91 women with gastric cancer (with a single exception) and 11 with cancer of the esophagus and 6 of the liver. The influence of heredity seemed to be apparent in 5 or 6 and possibly in 7 per cent. of all the cases. The influence of contagion also seems to be indicated in a number of others, the total reaching 14 per cent., in which there was evidence in favor of the assumption of direct transmission of the cancer. This proportion was still higher, between 14 and 20 per cent., for gastrointestinal cancers. In conclusion he appeals for closer study of the particulars in regard to the anamnesis respecting possible contagion. The collective inquiry by the Danish committee, he says, is the most valuable contribution of the kind yet presented, as over 99 per cent. of the medical men throughout the country cooperated and with zealous thoroughness.

Upsala Läkareförenings Förhandlingar

XIV, Nos. 7-8, pp. 507-668. Last indexed August 7, p. 496

98 *Primary Cancer of the Lungs. (Bidrag till kännedomen om den primära lungkancern.) S. Oerström.
99 *Development of Tuberculous Meningitis in Connection with Trauma. V. Hedesström.
100 Changes with Age in Number of Nucleated Cells in the Thymus. (Om åldersförändringar i de Hassal'ska kropparnes antal.) I. Syk.
101 Tuberculin Test for Differentiation of Tuberculous Salpingitis. (Om Kochska tuberkulinprofvet som diagnostikum vid den tuberkulösa salpingiten.) F. Zachrisson.
102 Thirty-five Cases of Ileus from Mechanical Obstacle. (Inre mekanisk tarmtillslutning.) G. Ekehorn.

98. **Primary Cancer in the Lungs.**—Oerström reports 7 cases of primary cancer of the lung, all but one in the right lung. The patients were between the ages of 47 and 69. One patient had had a dry cough at night for several years and began to feel weak a year before the cough increased and slight hoarseness was noticed, after which a tendency to dyspnea soon developed with increasing debility and pain in the right chest. Transient improvement followed tapping but the cancer progressed to a fatal termination four months after the increase in the cough had first suggested serious trouble. In the second case death occurred six months after the symptoms of oppression and pain in the right chest had first attracted attention. The first symptom in the third case was hoarseness, which persisted alone for nearly a year, when increasing emaciation and night sweats developed, followed by dull pain in the left thigh and inability to stand on the left leg. Signs of a lung tumor were found and spontaneous fracture of the femur confirmed the diagnosis of a metastatic cancer. Death ensued five months after the first serious symptoms. In the fourth case death occurred eight months after the patient first noticed that her right hand was growing weak and twitching. The jerkiness increased and the arm and back of the neck became involved in the spasms, after each of which the arm felt heavy and lifeless. These symptoms gradually increased to include the entire right side. On entering the hospital the clinical diagnosis was arteriosclerosis, aneurism of the aorta and brain tumor, but autopsy revealed a primary cancer in the right lung with metastases in the brain. The case shows how a metastatic brain cancer can overshadow the entire clinical picture while the primary growth escapes discovery. In the fifth case, chills were noticed and periods of great lassitude, followed in a month by development of pain in the right chest, severe cough and slight mucous expectoration, dyspnea and emaciation. The cancer diagnosed during life was found as anticipated in the right lung after death. It was accompanied by metastases in the liver, suprarenals, peritoneum, etc., and a hypernephroma was found in one kidney. The sixth patient was a soldier of 49 dying five months after he had first noticed pains in the left side of the chest radiating later to the stomach. He lost rapidly in weight and strength, but there was no cough although the physical signs indicated malignant disease in the left pleura. It proved to be a metastasis of a cancer in the left lung which had also induced metastases in the viscera. The seventh patient was a woman of 50, mother of 12 children, who had been coughing for two months, with a little blood at times in the scanty sputum; fine hard râles were heard over the left lung. She had also night sweats, but no tubercle bacilli in the sputum. The progressive dyspnea was explained by the autopsy findings in the seventh month, revealing a primary cancer in the right lung. The pathologic anatomy of the tumors in the various cases is described in detail and the prevalence of primary cancer in the lung is discussed on the basis of published records.

99. **Tuberculous Meningitis in Connection with Trauma.**—Hedesström reviews the literature on this subject and reports 5 cases from his own experience in which tuberculous meningitis followed a traumatism in persons with a primary focus elsewhere. The tuberculous meningitis was an autopsy surprise in 3 of the cases as attention had been directed solely to the trauma. The latter had probably roused the tubercle bacilli lying latent in some primary focus elsewhere and allowed their entrance into the blood where they settled in the meninges as the point of least resistance owing to the injury from the accident to the head. All the patients had been previously clinically healthy, and the trauma was comparatively trifling, but a few days afterward slight brain symptoms developed, increasing until the patients had typical meningitic symptoms by the fourteenth to the twenty-ninth day, with death the twenty-fourth to the fortieth day, the autopsy revealing the tuberculous nature of the meningitis and the unsuspected primary focus in the lungs or bronchial glands.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and *as space permits.*

Collectanea Jacobi. Collected Essays, Addresses, Scientific Papers and Miscellaneous Writings of A. Jacobi, M.D., University of Bonn (1851); LL.D., University of Michigan (1898), Columbia (1900), Yale (1905), Harvard (1906). Professor of Infantile Pathology and Therapeutics New York Medical College. In Eight Volumes. Edited by William J. Robinson, M.D., New York, 1909. Price, $15 per set. If ordered before January 1, $10. New York: The Critic and Guide Co., 1909.

Rotter's Typische Operationen. Kompendium der Chirurgischen Operationslehre. Mit besonderer Berücksichtigung der topographischen Anatomie, sowie der bedürfnisse des praktischen u. Feldarztes. 8 Auflage. Pp. 362, with illustrations. Herausgegeben von Dr. Alfred Schönwerth, K. Bayr. Oberstabsarzt und Privatdozent für Chirurgie. Cloth. Munich: J. F. Lehmann's Verlag, 1909.

Girl and Woman. By Caroline Wormeley Latimer, M.D., M.A., Formerly Instructor in Biology, Woman's College of Baltimore. With an introduction by Howard A. Kelly, M.D., Professor of Gynecological Surgery, Johns Hopkins University. Cloth. Pp. 318. Price, $2. New York: D. Appleton & Co., 1910.

Soured Milk and Pure Cultures of Lactic Acid Bacilli in Treatment of Disease. By George Herschell, M.D., Fellow of the Royal Society of Medicine. Second Edition. Cloth. Pp. 72, with illustrations. Price, 2/6 net. Chicago: Chicago Medical Book Co., 1909.

Practical X-Ray Therapy. By [illegible], M.D., Professor and Head of the [illegible] Chicago College of Medicine and Su [illegible] Pp. 250, with illustrations. Price, $1.50. Chicago: New Medicine Pub. Co.

Recent Advances in Physical and Inorganic Chemistry. By A. W. Stewart, D.Sc., Lecturer on Organic Chemistry in the University of Belfast. Cloth. Pp. 250. Price, $2.50. New York: Longmans, Green & Co., 1909.

Die Basedow'sche Krankheit. Von. Dr. med. H. Sattler, o. ö. Professor der Augenheilkunde an der Universität Leipzig. I. Teil: Symptomatologie. Paper. Pp. 523. Price, 21 marks. Leipzig: Wilhelm Engelmann, 1909.

Practical Therapeutics and Prescription Writing. By Daniel M. Hoyt, M.D., Instructor in Therapeutics, University of Pennsylvania. Flexible Leather. Pp. 291. Price, $2.50. Philadelphia: Edward P. Dolbey & Co.

Preventable Diseases. By Woods Hutchinson, A.M., M.D., Author of "Studies in Human and Comparative Pathology," etc. Cloth. Pp. 442. Price, $1.50. Boston: Houghton Mifflin Co., 1909.

Bacteriology for Nurses. By Isabel McIsaac, Author of "Primary Nursing Technique," etc. Cloth. Pp. 176, with illustrations. Price, $1.25. New York: The Macmillan Co., 1909.

State of Ohio Dairy and Food Department Bulletin. Patent or Proprietary Medicines. Renick W. Dunlap, State Dairy and Food Commissioner. Paper. Pp. 82.

Report of the Commissioner of Education for the Year Ended June 30, 1909. Vol. I. Cloth. Pp. 598. Washington: Government Printing Office, 1909.

The John Crerar Library.. A List of Books in the Reading Room, 1909. Paper. Pp. 488. Chicago: Printed by order of the Board of Directors.

Annual Report of the Brockton Hospital Company for the Year 1908. Paper. Pp. 56.

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Original Articles

THE SYMPTOMATOLOGY AND FUNCTIONS OF THE OPTIC THALAMUS*

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SYMPTOMATOLOGY

Some years ago I wrote several papers on the subject of the bilateral temperatures in cerebral hemorrhages, and came to the conclusion that cerebral hemorrhages of any importance caused a slight rise in the temperature on the paralyzed side, a phenomenon which did not occur in acute softenings and which had, therefore, some diagnostic value. I further found that there was no particular area in the cerebral hemispheres which seemed to have definite relation to rise or fall of the bodily temperature—in other words, no specific heat center, such as physiologists seem to be able to find in experimental studies on lower animals. Pursuing a somewhat similar line of investigations as regards blood pressures on each side of the body after cerebral hemorrhages, using the Riva-Rocci and Janeway apparatus, I found that, as a rule, there was a difference of several millimeters of mercury in the two sides, there being a lower pressure on the paralyzed side than on the sound side. This unilateral fall in blood-pressure is present very soon after the attack and continues for one or two weeks. The general blood-pressure usually falls during this time, and, as it does this, the blood-pressure on the two sides becomes gradually equal, even though the hemiplegia continues; hence the drop in pressure is not due to muscular paralysis. This final equalization of pressures, however, I found did not always take place. In one patient, who had had his hemiplegia for six years, I found a difference in blood-pressure sometimes of 15 or 20 mm., the pressure being lower on the affected side. For example, on one occasion, the blood-pressure on the right side was 200 and on the left side 150. On another occasion the difference was only 10, the pressure being 160 on the normal side and 150 on the paralyzed side. This patient's hemiplegia had features which indicated an involvement of the optic thalamus. His hemiplegia was not accompanied by contractures, and the arm and fingers of the hand hung straight to the side. The hemiplegia was not very great. The patient's grip was fairly good and he could walk quite well. He had no ankle-clonus and no Babinski phenomenon. While there was no anesthesia or ataxia on the affected side, he suffered intensely from central pain, complaining of a burning and soreness all the time, as well as a great deal of tenderness and hyperesthesia on the paralyzed side. He had, however, no hemianopsia, no disturbances of the ocular muscles or of the pupillary reflexes. The hemiplegia had at first been very much more marked, and was accompanied by ankle clonus and Babinski, but this had gradually disappeared, leaving, to a great extent, only a hemisensory disorder. There was evidently, also, some vasomotor disturbance on this paralyzed side, for the hand was puffy and reddened, and the circulation was evidently sluggish. This altogether formed a fairly good syndrome of the thalamic lesion, and it led me to investigate the blood-pressure in such other cases as I could observe. So far these have been only two. In both of these there was a fairly good thalamic syndrome, with a difference in blood-pressure of between 5 and 10 mm. I have not been able to discover such marked differences in blood-pressure in other old hemiplegics who did not present evidences of a thalamic involvement. Still, this part of my investigations is not finished, and I only present these points as suggestive and worthy of further investigations.

During this time, my interest being aroused in the symptoms due to thalamic lesions, I collected three reports of cases, with autopsies, which had come under my observation at Bellevue Hospital during recent years, and, at the same time, I was fortunate in observing a patient under the care of the late Dr. Loomis, who had a hemiplegia, with thalamic symptoms, and who subsequently died. The autopsy showed a very well-defined lesion, involving the inner portion of the thalamus.

I have studied the symptoms of these four cases and collated them with the studies of three other cases in which there were no autopsies, in order to see how far the records would corroborate preceding observations regarding the symptoms of thalamic lesions. In acute lesions there are three groups of symptoms: one consisting of such symptoms as disturbance of intelligence, due to the general effects of an insult to the brain; second, a set of symptoms due to the pressure of the thalamic lesion on surrounding parts, or the involvement, to some extent, of these parts, and, third, disturbances due to an injury of the thalamus itself.

1. The general symptoms vary, naturally, very much, with the condition of the patient, and have little bearing on the question of localization. Some of my patients, for example, were alcoholic; one had a beginning tuberculosis and terminal pneumonia, and two others had very extensive general cerebral arteriosclerosis.

2. The symptoms due to involvement of or pressure on neighboring parts of first importance were those causing the hemiplegia. This is due to the clot pressing on or tearing the internal capsule, so that in almost all lesions of the thalamus there is at first a hemiplegia, with usually exaggerated reflexes and signs of involvement of the pyramidal tract. These symptoms, after a

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

longer or shorter time, pass away in great part, leaving often an almost flaccid hemiplegia. With the hemiplegia there is always some anesthesia, which involves both the superficial and deep sensibilities, so that there may be some hemiataxia as well as hemianesthesia. This anesthesia improves, but, as a rule, it does not entirely disappear, so that finally the patient is left with a sensory hemiplegia largely. The other extrathalamic symptoms were those due to involvement of the corpora quadrigemina and mid-brain. These in my cases consisted only in inequalities of the pupils and paralyses of eye reflexes. Disturbances of ocular movements and forced movements of the body, and choreic and athetoid movements, might be expected, and have been observed, but were not present in my cases. The same may be said of hemianopsia, which occurs when there is involvement of the primary visual centers, including the lateral geniculate body and posterior corpora quadrigemina or the tracts connected with these.

3. The most definite symptoms of thalamic lesion alone seem to be central pain, some anesthesia and perhaps some hemianopsia. The latter two symptoms may be caused also by a lesion that is extrathalamic. Whether vasomotor and temperature changes occur or the visceral centers can be affected is yet to be proved; but the more recent cases which I have observed seem to indicate that at least extensive lesions in the thalamic territory or zone do cause such results. The pain involves the paralyzed side only; it involves the arm and hands most, the leg and foot next, rarely the head; it is more severe in the peripheral segments of the limbs, i. e., the hands and feet; it may be very distressing and intense. It is usually different from the ordinary kinds of pain, being a sort of burning discomfort, much more distressing, apparently, than sharp or aching pains, and often making the patient's life a burden. Even when the pain is only a slight dysthesia, it seems to annoy the patients intensely. Sometimes the pain is said to be neuralgic and shooting in character. I have not noted such cases.

In all my patients with autopsies there were changes in the pupils. They were usually unequal and one or the other was rigid.

In none of the cases have I observed the so-called paralysis of emotional expression, and in none have I observed any decided explosive laughter or crying, unless there were symptoms which showed that the lesion involved more than the thalamus. The hemiplegia, in these cases, if it persisted, as it usually did, to some extent, was not accompanied eventually by any increase in reflexes or signs of involvement of the motor tract. I found, in none of them, any choreic or athetoid movements, and it seems to me that these post-hemiplegic movements are in all cases, whatever their source, more commonly developed in children and not in adults.

About the time that I was studying these cases Roussy published a very elaborate monograph on the optic thalamus and the thalamic syndrome. His work contains a very complete and admirable historical introduction. It contains the records of experiments on animals which, it seems to me, are not convincing, and are certainly far less valuable than those which have been made and are now being made by Dr. Ernest Sachs. His clinical studies and pathologic work are, however, very carefully done, and he reaches the conclusion that the thalamic syndrome, which merits to-day a place in our nosology, is characterized by, first, a slight, persistent hemianesthesia, more or less marked for superficial sensation, and, second, by a slight hemiplegia, usually without contracture, and rapidly regressive; third, by a hemiataxia, which is slight, and an astereognosis, more or less complete; fourth, by sharp pains on the hemiplegic side, which are persistent, paroxysmal, often intolerable, and not yielding to any treatment, and, fifth, by certain choreic and athetoid movements in the limbs of the paralyzed side.

Aside from the purely thalamic syndrome, we often have, as already stated, lesions which involve the thalamus and the parts adjacent, so that usually the thalamic syndrome is complicated by the symptoms of these adjacent parts. If the lesion extends well forward, we have a permanent hemiplegia, with contractures. If it is more posterior, we have hemianopsia, involvement of the ocular muscles, pupillary reflexes and forced movements.

It will be seen that the cases which I have studied tend to confirm, in a general way, the elaborate studies of Roussy. We have both, apparently, independently reached the conclusion that the old idea of the thalamus being an organ which controlled the movements of emotional expression was incorrect. It seems unlikely, also, that pure lesions of the thalamus lead to any such disturbances of emotional expression as are seen in forced laughter and forced crying. Still, I believe that thalamic lesions which extend into other areas and involve some of the associated tracts and higher reflexes do produce these phenomena.

FUNCTIONS

It would be premature in me now to discuss the extremely interesting question of the anatomic connections and functions of the thalamus. Work on this line is being carried on by Dr. Ernest Sachs with the very ingenious instruments devised by Sir Victor Horsley and Dr. R. H. Clark. The tendency of the investigations of Sachs, as well as those of Roussy, and of the comparative anatomic studies of Edinger, is to show that the thalamus is essentially only an organ for the reception and distribution to the cortex of sensory impressions, that it forms a part of the primary sensory centers for vision, hearing, smell, equilibrium and deep and superficial sensibility.

One stands almost aghast at the enormous inflow of sensory impulses which this small body must be continually receiving and distributing. The spinothalamic fibers bring up sensations from the columns of Goll and Burdach, and the anterior peduncles of the cerebellum pour its equilibrating outflow from cerebellar cortex and dentate nucleus into the thalamus. The pulvinar receives some of the primary visual sensations, and there are centers which receive impulses from the auditory and olfactory nerves. This sensory inflow is distributed to the various regions of the cortex connected with the sense of vision, hearing and smell and muscular and cutaneous sensibility. Dr. E. Sachs has shown that tracts from the thalamus pass up to the precentral convolutions, there being special fibers for the face, arm, trunk and leg centers.

The thalamus, therefore, seems really to have about the function which Meynert assigned to it thirty years ago, when he said that it was an organ which received sensations and registered them in consciousness. There is still some dispute as to whether it has efferent tracts to the cranial and spinal motor nerves, acting in this way as a reflex center of a high order. It does, however, send efferent fibers to the longitudinal bundle. There is also some question as to whether there are fibers from the cortex to the thalamus. The question whether the thalamus has centers for vasomotor and thermic regulation or for the visual organs is still unsettled. At present all we can say is that it is an enormous primary sensory nodule, acting to receive and to distribute sensory impulses probably of all kinds, but just as it is not all of the primary visual centers or of the primary auditory centers so it seems to me likely that it is not the whole of the primary center for the sensations that are poured in from the spinal cord and cerebellum.

Therefore, there would come from its injury always some sensory disturbances, such as anesthesias, ataxias, astereognosis, pains, and disturbances of vision and of the ocular movements, but these would not be complete in any direction.

In conclusion, we may accept it as a fact that there is a pretty definite thalamic syndrome which has been given above and ought to enable us to recognize thalamic lesions and thalamic lesions associated with injury to neighboring parts. This syndrome may be made much more definite and modified by subsequent investigations. It may be found, for example, that some ocular reflex disturbances always occur; the character of the sensory disturbances need careful study; also the changes in the vasomotor innervation and temperature; indirectly, through involvement of the thalamus, there may be some psychical disturbances, and in large lesions forced laughter and crying may be present. The syndrome varies somewhat according to the location of the lesion. The thalamus has a vascular supply from three different sources, and the organ can not be easily destroyed altogether by one vascular lesion.[1]

Case 1.—*Focal Hemorrhage in the Optic Thalamus.—History.*—Charles C., aged 56, colored, born in the United States, occupation, porter, was admitted to Bellevue Hospital on December 26. His father died at the age of 60, of unknown cause, and his mother at childbirth; his two brothers were living and well. The family history was unimportant, there being in it no history of rheumatism or arterial disease or alcoholism. The patient was married and had two children. He suffered from the ordinary children's diseases, and had rheumatism about five years before admission. He had had no previous attack like the present. He was moderate in his habits—in his use of tobacco and beer. There was no specific history, or evidence of syphilis about him.

Present Illness.—The patient's story was that at about 11 a. m. on the day of admission, while at his ordinary work, and feeling as well as usual, he suddenly felt a severe headache, with sickness of the stomach and vertigo. He had to stop work, and an ambulance was called which brought him to the hospital.

Examination.—When admitted he was in a semicomatose state, with a very complete paralysis of the left side, so that he could not move either arm or leg; there was also a lower facial paralysis, the tongue protruding to the left. In general appearance he was fairly well nourished, mucous membranes normal, tongue white and coated. There was a systolic apex murmur over the heart; the pulse was slow (50 per minute), regular and strong, of moderate volume, and not very high tension. The arteries were much thickened and had calcareous deposits. The temperature was subnormal, 97.4 F., in rectum. respirations 28, and there were a few mucous râles in the lungs. The abdominal organs were normal; skin moist. An examination of the urine, made the next day, and on several subsequent days, showed a specific gravity ranging from 1020 to 1025, a trace of albumin, no sugar, hyaline and granular casts during the first week, but no casts after that time. The eyes showed a pronounced arcus senilis; the pupils were unequal, left large, the right small, the left reacted to light slightly, the right not at all to light or accommodation. The paralysis of the left side was complete, as stated, involving the lower part of the face, hand and leg. Both knee-jerks were exaggerated, the left more than the right; there was no clonus or Babinski reflex. There was a slight degree of anesthesia on the left side; no hemianopsia. The patient was able to swallow and his speech was normal, except that it was indistinct, owing to the clouded mental condition. He had incontinence of urine but not of the bowels. He was too stupid to exhibit any emotional disturbances.

Course of Disease.—He vomited once about an hour after admission. He passed a quiet night, took nourishment very well, and appeared much brighter in the morning. His incontinence of urine continued the next day, so that he had to be catheterized. This incontinence continued for the succeeding week. The next day his paralysis had nearly disappeared. He could move the arm and leg, in one or two days he was able to sit up and in four or five days he walked about the wards. At the end of about a week, however, he complained of weakness and grew more dull, went to bed and did not get out of it again. He continued in bed, growing more apathetic, though restless at times, and acted in a childish and irrational manner, talking continually, trying to get out of bed, so that some of the time his feet and shoulders had to be restrained. He would move his arms about restlessly, pulling at the bedclothes and trying to pull over the table near him or to stretch out and reach the patient in the neighboring bed. Still he was able to answer ordinary questions and to talk with his children, who came to see him in the first week of his stay. At the end of ten days he developed at times incontinence of feces as well as of the bladder. The changes in the pupils disappeared, as did also most of the anesthesia and all of the exaggeration of the reflexes. At no time was it possible to get an ankle-clonus or a Babinski on the left side. At the end of the third week the patient was unable to swallow nourishment and medication, and became very weak. He at no time seemed to suffer from any disorder of the special senses, his eyesight and hearing being apparently normal. His temperature, after the initial fall, gradually rose, so that on the seventh day and again on the eleventh day it was 101. It ranged during the course of his illness about 99½. The last day of his illness it rose to 102½ in the rectum. The pulse, which was at first about 50, gradually increased until, on the fifth day, it was 60, and on the seventh day 80. It then gradually increased until it ranged about 100; respirations ranged about 26 throughout the course of the disease. He had an average of one stool a day; the urinal amounts were small, ranging from 10 to 20 ounces per day, though at times some was lost with the stools. He finally developed a hypostatic pneumonia and died on January 16, three weeks after the onset of the disease.

Autopsy.—The postmortem, made by Dr. Flournoy, showed a slight amount of tuberculosis of the apex of the lungs, and beginning apex pneumonia, on the right side; a thickening and hardening at the base of the aortic valves, and a thickening of both mitral valves, with hypertrophy of the left ventricular wall; marked atheromatous changes in the aorta, both in its thoracic and abdominal portions; very general arteriosclerosis; spleen, liver, suprarenals, and abdominal viscera normal; a chronic interstitial nephritis. The brain showed marked atheroma of the vessels at the base. The dura was not adherent. No edema was noted. The only gross lesion of the brain was a hemorrhage about 2 by 1 cm. in size, in the inner and anterior portion of the right optic thalamus, and confined to the optic thalamus, but pressing very manifestly on the internal capsule behind the germ. The posterior portion or pulvinar of the thalamus was not involved, and as this is the part which is supplied by the posterior cerebral, it is to be inferred that the vessel which was ruptured was one of the small branches of the opticostriate artery, which comes from the middle cerebral.

The localizing symptoms in this case are explained by the findings. The hemiplegia was undoubtedly due simply to pressure. The patient's mental condition was very dull, and he was inclined to sleep a great deal—a phenomenon which has been observed in thalamus lesions.

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[1] Hemorrhages in the thalamus may come from (1) the lenticulo-optic arteries; (2) the postero-internal optic (a branch from the posterior communicating); (3) the anterior choroidal arteries; (4) a branch of the posterior cerebral, which sends also branches to the geniculate bodies and their surrounding parts. Also the arteries of the corpora quadrigemina send small branches to the thalamus. On account of this varied supply of small arteries, hemorrhages of the thalamus are smaller than those of the corpus striatum. The lenticulo-optic and the branch from the posterior communicating cause hemorrhages in the anterior and posterior parts respectively. Those in the posterior part are certainly rare. It is these which destroy the pulvinar and often neighboring parts, and cause central pain, hemianesthesia and hemianopsia.

longer or shorter time, pass away in great part, leaving often an almost flaccid hemiplegia. With the hemiplegia there is always some anesthesia, which involves both the superficial and deep sensibilities, so that there may be some hemiataxia as well as hemianesthesia. This anesthesia improves, but, as a rule, it does not entirely disappear, so that finally the patient is left with a sensory hemiplegia largely. The other extrathalamic symptoms were those due to involvement of the corpora quadrigemina and mid-brain. These in my cases consisted only in inequalities of the pupils and paralyses of eye reflexes. Disturbances of ocular movements and forced movements of the body, and choreic and athetoid movements, might be expected, and have been observed, but were not present in my cases. The same may be said of hemianopsia, which occurs when there is involvement of the primary visual centers, including the lateral geniculate body and posterior corpora quadrigemina or the tracts connected with these.

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In all my patients with autopsies there were changes in the pupils. They were usually unequal and one or the other was rigid.

In none of the cases have I observed the so-called paralysis of emotional expression, and in none have I observed any decided explosive laughter or crying, unless there were symptoms which showed that the lesion involved more than the thalamus. The hemiplegia, in these cases, if it persisted, as it usually did, to some extent, was not accompanied eventually by any increase in reflexes or signs of involvement of the motor tract. I found, in none of them, any choreic or athetoid movements, and it seems to me that these post-hemiplegic movements are in all cases, whatever their source, more commonly developed in children and not in adults.

About the time that I was studying these cases Roussy published a very elaborate monograph on the optic thalamus and the thalamic syndrome. His work contains a very complete and admirable historical introduction. It contains the records of experiments on animals which, it seems to me, are not convincing, and are certainly far less valuable than those which have been made and are now being made by Dr. Ernest Sachs. His clinical studies and pathologic work are, however, very carefully done, and he reaches the conclusion that the thalamic syndrome, which merits to-day a place in our nosology, is characterized by, first, a slight, persistent hemianesthesia, more or less marked for superficial sensation, and, second, by a slight hemiplegia, usually without contracture, and rapidly regressive; third, by a hemiataxia, which is slight, and an astereognosis, more or less complete; fourth, by sharp pains on the hemiplegic side, which are persistent, paroxysmal, often intolerable, and not yielding to any treatment, and, fifth, by certain choreic and athetoid movements in the limbs of the paralyzed side.

Aside from the purely thalamic syndrome, we often have, as already stated, lesions which involve the thalamus and the parts adjacent, so that usually the thalamic syndrome is complicated by the symptoms of these adjacent parts. If the lesion extends well forward, we have a permanent hemiplegia, with contractures. If it is more posterior, we have hemianopsia, involvement of the ocular muscles, pupillary reflexes and forced movements.

It will be seen that the cases which I have studied tend to confirm, in a general way, the elaborate studies of Roussy. We have both, apparently, independently reached the conclusion that the old idea of the thalamus being an organ which controlled the movements of emotional expression was incorrect. It seems unlikely, also, that pure lesions of the thalamus lead to any such disturbances of emotional expression as are seen in forced laughter and forced crying. *Still, I believe that thalamic* lesions which extend into other areas and involve some of the associated tracts and higher reflexes do produce these phenomena.

FUNCTIONS.

It would be premature in me now to discuss the extremely interesting question of the anatomic connections and functions of the thalamus. Work on this line is being carried on by Dr. Ernest Sachs with the very ingenious instruments devised by Sir Victor Horsley and Dr. R. H. Clark. The tendency of the investigations of Sachs, as well as those of Roussy, and of the comparative anatomic studies of Edinger, is to show that the thalamus is essentially only an organ for the reception and distribution to the cortex of sensory impressions, that it forms a part of the primary sensory centers for vision, hearing, smell, equilibrium and deep and superficial sensibility.

One stands almost aghast at the enormous inflow of sensory impulses which this small body must be continually receiving and distributing. The spinothalamic fibers bring up sensations from the columns of Goll and Burdach, and the anterior peduncles of the cerebellum pour its equilibrating outflow from cerebellar cortex and dentate nucleus into the thalamus. The pulvinar receives some of the primary visual sensations, and there are centers which receive impulses from the auditory and olfactory nerves. This sensory inflow is distributed to the various regions of the cortex connected with the sense of vision, hearing and smell and muscular and cutaneous sensibility. Dr. E. Sachs has shown that tracts from the thalamus pass up to the precentral convolutions, there being special fibers for the face, arm, trunk and leg centers.

The thalamus, therefore, seems really to have about the function which Meynert assigned to it thirty years ago, when he said that it was an organ which received sensations and registered them in consciousness. There is still some dispute as to whether it has efferent tracts to the cranial and spinal motor nerves, acting in this way as a reflex center of a high order. It does, however, send efferent fibers to the longitudinal bundle. There is also some question as to whether there are fibers from the cortex to the thalamus. The question whether the thalamus has centers for vasomotor and thermic regulation or for the visual organs is still unsettled. At present all we can say is that it is an enormous primary sensory nodule, acting to receive and to distribute sensory impulses probably of all kinds, but just as it is not all of the primary visual centers or of the primary auditory centers so it seems to me likely that it is not the whole of the primary center for the sensations that are poured in from the spinal cord and cerebellum.

Therefore, there would come from its injury always some sensory disturbances, such as anesthesias, ataxias, astereognosis, pains, and disturbances of vision and of the ocular movements, but these would not be complete in any direction.

In conclusion, we may accept it as a fact that there is a pretty definite thalamic syndrome which has been given above and ought to enable us to recognize thalamic lesions and thalamic lesions associated with injury to neighboring parts. This syndrome may be made much more definite and modified by subsequent investigations. It may be found, for example, that some ocular reflex disturbances always occur; the character of the sensory disturbances need careful study; also the changes in the vasomotor innervation and temperature; indirectly, through involvement of the thalamus, there may be some psychical disturbances, and in large lesions forced laughter and crying may be present. The syndrome varies somewhat according to the location of the lesion. The thalamus has a vascular supply from three different sources, and the organ can not be easily destroyed altogether by one vascular lesion.[1]

CASE 1.—*Focal Hemorrhage in the Optic Thalamus.—History.*—Charles C., aged 56, colored, born in the United States, occupation, porter, was admitted to Bellevue Hospital on December 26. His father died at the age of 60, of unknown cause, and his mother at childbirth; his two brothers were living and well. The family history was unimportant, there being in it no history of rheumatism or arterial disease or alcoholism. The patient was married and had two children. He suffered from the ordinary children's diseases, and had rheumatism about five years before admission. He had had no previous attack like the present. He was moderate in his habits—in his use of tobacco and beer. There was no specific history, or evidence of syphilis about him.

Present Illness.—The patient's story was that at about 11 a. m. on the day of admission, while at his ordinary work, and feeling as well as usual, he suddenly felt a severe headache, with sickness of the stomach and vertigo. He had to stop work, and an ambulance was called which brought him to the hospital.

Examination.—When admitted he was in a semicomatose state, with a very complete paralysis of the left side, so that he could not move either arm or leg; there was also a lower facial paralysis, the tongue protruding to the left. In general appearance he was fairly well nourished, mucous membranes normal, tongue white and coated. There was a systolic apex murmur over the heart; the pulse was slow (50 per minute), regular and strong, of moderate volume, and not very high tension. The arteries were much thickened and had calcareous deposits. The temperature was subnormal, 97.4 F., in rectum. respirations 28, and there were a few mucous râles in the lungs. The abdominal organs were normal; skin moist. An examination of the urine, made the next day, and on several subsequent days, showed a specific gravity ranging from 1020 to 1025, a trace of albumin, no sugar, hyaline and granular casts during the first week, but no casts after that time. The eyes showed a pronounced arcus senilis; the pupils were unequal, left large, the right small, the left reacted to light slightly, the right not at all to light or accommodation. The paralysis of the left side was complete, as stated, involving the lower part of the face, hand and leg. Both knee-jerks were exaggerated, the left more than the right; there was no clonus or Babinski reflex. There was a slight degree of anesthesia on the left side; no hemianopsia. The patient was able to swallow and his speech was normal, except that it was indistinct, owing to the clouded mental condition. He had incontinence of urine but not of the bowels. He was too stupid to exhibit any emotional disturbances.

Course of Disease.—He vomited once about an hour after admission. He passed a quiet night, took nourishment very well, and appeared much brighter in the morning. His incontinence of urine continued the next day, so that he had to be catheterized. This incontinence continued for the succeeding week. The next day his paralysis had nearly disappeared. He could move the arm and leg, in one or two days he was able to sit up and in four or five days he walked about the wards. At the end of about a week, however, he complained of weakness and grew more dull, went to bed and did not get out of it again. He continued in bed, growing more apathetic, though restless at times, and acted in a childish and irrational manner, talking continually, trying to get out of bed, so that some of the time his feet and shoulders had to be restrained. He would move his arms about restlessly, pulling at the bedclothes and trying to pull over the table near him or to stretch out and reach the patient in the neighboring bed. Still he was able to answer ordinary questions and to talk with his children, who came to see him in the first week of his stay. At the end of ten days he developed at times incontinence of feces as well as of the bladder. The changes in the pupils disappeared, as did also most of the anesthesia and all of the exaggeration of the reflexes. At no time was it possible to get an ankle-clonus or a Babinski on the left side. At the end of the third week the patient was unable to swallow nourishment and medication, and became very weak. He at no time seemed to suffer from any disorder of the special senses, his eyesight and hearing being apparently normal. His temperature, after the initial fall, gradually rose, so that on the seventh day and again on the eleventh day it was 101. It ranged during the course of his illness about 99½. The last day of his illness it rose to 102½ in the rectum. The pulse, which was at first about 50, gradually increased until, on the fifth day, it was 60, and on the seventh day 80. It then gradually increased until it ranged about 100; respirations ranged about 26 throughout the course of the disease. He had an average of one stool a day; the urinal amounts were small, ranging from 10 to 20 ounces per day, though at times some was lost with the stools. He finally developed a hypostatic pneumonia and died on January 16, three weeks after the onset of the disease.

Autopsy.—The postmortem, made by Dr. Flournoy, showed a slight amount of tuberculosis of the apex of the lungs, and beginning apex pneumonia, on the right side; a thickening and hardening at the base of the aortic valves, and a thickening of both mitral valves, with hypertrophy of the left ventricular wall; marked atheromatous changes in the aorta, both in its thoracic and abdominal portions; very general arteriosclerosis; spleen, liver, suprarenals, and abdominal viscera normal; a chronic interstitial nephritis. The brain showed marked atheroma of the vessels at the base. The dura was *not* adherent. No edema was noted. The only gross lesion of the brain was a hemorrhage about 2 by 1 cm. in size, in the inner and anterior portion of the right optic thalamus, and confined to the optic thalamus, but pressing very manifestly on the internal capsule behind the germ. The posterior portion or pulvinar of the thalamus was not involved, and as this is the part which is supplied by the posterior cerebral, it is to be inferred that the vessel which was ruptured was one of the small branches of the opticostriate artery, which comes from the middle cerebral.

The localizing symptoms in this case are explained by the findings. The hemiplegia was undoubtedly due simply to pressure. The patient's mental condition was very dull, and he was inclined to sleep a great deal—a phenomenon which has been observed in thalamus lesions.

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[1] Hemorrhages in the thalamus may come from (1) the lenticulo-optic arteries; (2) the postero-internal optic (a branch from the posterior communicating); (3) the anterior choroidal arteries; (4) a branch of the posterior cerebral, which sends also branches to the geniculate bodies and their surrounding parts. Also the arteries of the corpora quadrigemina send small branches to the thalamus. On account of this varied supply of small arteries, hemorrhages of the thalamus are smaller than those of the corpus striatum. The lenticulo-optic and the branch from the posterior communicating cause hemorrhages in the anterior and posterior parts respectively. Those in the posterior part are certainly rare. It is these which destroy the pulvinar and often neighboring parts, and cause central pain, hemianesthesia and hemianopsia.

There was an unusual disturbance of temperature at the beginning; it could not be inferred that the lesion here had any effect on what fever the patient had later. There were no convulsive choreic movements and no evidence of pain, either central or peripheral. The patient's clouded mental condition was one that could hardly be explained by the very circumscribed lesion. The paralysis of the bladder came on early and continued to be present, despite the disappearance of the hemiplegia. One could not certainly, however, exclude the mental condition as the causative agent in producing the bladder incontinence. There were no trophic disturbances of the body and no marked vasomotor disturbances. Whether the patient had any paralysis of the emotional movements of face, I regret to say, could not be determined. They certainly were not noticeable when the examination was first made. At that time the facial paralysis was similar to that found in ordinary hemiplegia, involving the internal capsule.

The localizing symptoms were a flaccid sensory-motor hemiplegia, the motor symptoms rapidly disappearing, leaving only sensory symptoms; the absence of exaggerated reflexes; pupillary symptoms.

The absence of central pain was, no doubt, due to the fact that the posterior portion of the thalamus was not involved, the central pain probably only occurring when the branch of the posterior cerebral, which supplies this part, is affected.

The theory that choreic and asthetoid movements are produced by lesions of the thalamus, which irritate the fibers of the internal capsule, would seem to be somewhat weakened by the facts of this case, so far as they go, for here was a lesion which unmistakably pressed directly on and lay close to the motor and sensory tract of the capsule.

The mental condition was not unlike that seen in terminal apoplectic states and might be largely due to the pressure and irritation of the lesion at first; later to toxemia and secondary degenerative changes in the brain, the result of the arterial sclerosis.

Case 2.—*History.*—Henry H., aged 64, mason, was brought to the hospital with the history of having suddenly fallen from a chair, and found to be partially paralyzed on the left side. His previous history was little known, except that he had been a hard drinker. It was not until about three weeks after this attack that he was brought to Bellevue Hospital, where he was admitted on February 21.

Examination.—He was then much emaciated, with brown, dry tongue, rectal temperature 97.6, regular but feeble heart action, no murmurs. The thoracic and abdominal organs were apparently normal, except that the liver was quite small. There was no albuminuria. There was a partial paralysis of the left side, the leg being held rather stiffly, but the tendon-reflexes were absent and there was no clonus. There was some loss of cutaneous sensation on this left side. The pupils were equal, but did not react to light or accommodation. The neck was somewhat stiff. The patient was in a semidelirious state, but slept the greater part of the time. There was incontinence of bladder and bowels. The arteries were very incompressible and atheromatous.

Course of Disease.—The patient continued in about the same condition of semicoma, with a muttering delirium, but without any fever, temperature ranging from 97.4 to 98. He finally developed pulmonary edema and died two weeks after his admission and about two months after the onset of his disease.

Autopsy.—The lungs were emphysematous; the heart was hypertrophied, with some rigidity of the valves. There was atheroma of the aorta. The liver was cirrhotic. The kidneys showed some amount of cirrhosis and parenchymatous degeneration, though there had been no albumin in the urine. The brain showed a good deal of serous effusion under the pia and in the subarachnoid space. There was an old hemorrhage, which had occurred six weeks before in the thalamus, and also quite a fresh one, which lay to the outer side of the first. The first was confined to the thalamus, the second extended into adjacent parts.

In this case the localizing symptoms were masked by the confused mental condition.

There was the rather remarkable persistence of low temperature, and the rigid pupils, the sensori-motor hemiplegia without exaggerated reflexes, were suggestive. The muttering delirium and the mental cloudiness and somnolence are best explained by the general condition of arterial sclerosis and the so-called "serous meningitis" or serous effusion which were present. He had had no alcohol for two months. The loss of reflex to light and accommodation in the pupils and absence of deep reflexes were symptoms found also in the previous case.

Case 3.—*History.*—Christina T., aged 53, Italian, personal history unknown, two weeks before admission to the hospital, was going downstairs, and when near the bottom suddenly fell forward on the floor. She was picked up unconscious and remained so for about an hour. Then she became restless and delirious, and it was noticed that she had a left hemiplegia. She was brought to the hospital two weeks later.

Examination.—When admitted the patient was in a mildly delirious condition. There was a considerable degree of paralysis of the left arm and leg, but very little in the face. There was a cutaneous anesthesia of the left side, and the reflex of the knee on the left side was absent. The thoracic and abdominal organs were normal, except that the urine showed a small amount of albumin and casts.

Course of Disease.—On the succeeding days the patient became more quiet and finally quite rational. She slept most of the time. Pupils were evenly contracted, but responded to light. The paralysis gradually improved. After about ten days she began to relapse into a comatose condition, with stertorous respiration, and four days later the coma deepened, the pulse became slow, and she died.

Autopsy.—There was found a large recent clot in the optic thalamus, on the right side. The ventricular fluid was not in any excess, but was slightly stained with blood; the clot, however, had not burst into the ventricle. The kidneys showed a chronic fibrous nephritis.

Case 4.—*History.*—The patient, a man, aged 34, was taken to the alcoholic wards of Bellevue Hospital, suffering from delirium tremens. He presented the usual symptoms of motor and mental excitement, with hallucinations. Nothing was known of the previous history. His temperature on admission was 105.4. The next day it was 105.8, and he died on the second day. During his stay in the ward he showed no evidences of any paralysis or any disturbance of nervous centers, aside from the excitement and delirium.

Autopsy.—The brain in this case showed the usual degree of congestion. There was no exudation and not much edema. On cutting the brain open a small hemorrhage was found in the middle part of the posterior third of the right optic thalamus. It measured 1 by 0.75 cm. and was about the size of a small bean. Another small hemorrhage was seen on the descending horn of the right lateral ventricle. The other organs were practically normal.

The history in Case 3 simply shows a temporary hemiplegia with residual anesthesia and absent reflex. This, so far as it goes is characteristic of the thalamic syndrome. The fourth case shows simply that a small thalamic lesion may be present and cause no severe symptoms.

53 West Fifty-third Street.

ABSTRACT OF DISCUSSION

Dr. Hugh T. Patrick, Chicago: In these thalamic lesions are the pain and anesthesia pretty well defined as to localization, that is, not quite hemiplegic, but perhaps affecting only the foot, hand or face? This point might be noted in connection with my own paper, because one of the patients whom I did not inject was sent to me by a physician who assured her that I would relieve the pain. She complained of pain particularly in the upper part of the face, not limited to the supraorbital distribution; it was not pain of trifacial neuralgia, but it was exceedingly distressing and was a constant pain which was just wearing this old lady out. She had the other symptoms of thalamic lesion; that is, she had had a stroke of hemiplegia from which she had practically recovered and still had the anesthesia. There was a little clumsiness on the one side, but practically no loss of power.

Dr. H. A. Tomlinson, St. Peter, Minn.: I have the records of three cases of unusually high temperature persisting until death, in which, postmortem, I found a spot of softening on the ventricular surface of the optic thalamus just to the outside of the pulvinar. In these cases the temperature had ranged from 105 to 107 F. for several days before death.

Dr. Julius Grinker, Chicago: In the cases of hemiplegia which are followed by pain, of the kind described, are we to infer that the lesion is always in the optic thalamus?

Dr. C. L. Dana: In Dr. Patrick's case the pain was a central one, but in the cases I have seen the pain has been in the arm and foot mainly, not all over the body necessarily, but in one case I remember the patient who was rather hemiplegic still had terrible pain in the foot and leg. In another patient it was mainly in the arm; and I can conceive that the lesion might be such as to cause pain mainly in the face.

I doubt if one can get any central pain from a brain lesion alone except from a lesion of the thalamus. I do not think there can be pain from the irritation of the sensory tract behind it unless it be perhaps in the bulb. The real serious pain at least seems to be always a thalamic pain.

TRANSMISSION OF MALARIAL FEVER IN THE CANAL ZONE BY ANOPHELES MOSQUITOES *

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It is between eleven and twelve years since Ronald Ross conducted his famous experiments demonstrating the transmission of malarial fever by mosquitoes. This demonstration, it seems to me, has contributed more to the forging of the key to the control of the tropics than any other one in the annals of tropical medicine, for Ross' discovery focused the attention of the medical world on the part played by suctorial invertebrates in the transmission of infectious diseases. Knowledge of this doctrine of the insect intermediary host, coupled with Dr. H. R. Carter's invaluable observation of the extrinsic period of incubation, enabled the yellow fever commission to verify Finlay's notion about the transmission of yellow fever by stegomyia mosquitoes.

The application of these two discoveries, Ross' and Reed's, to the problems of preventive medicine by your President-elect has made yellow fever a historic disease in Panama and is surely reducing the morbidity and mortality from malarial fever to the vanishing-point.

The object of the work briefly reported here was to go over the whole subject of the transmission of malarial fever by anopheles mosquitoes. I have been guided by the work of Ronald Ross, Stephens, Christophers and James, whose investigations of malaria in India and Africa must stand as models for all future workers on this subject. In every malarial region it is a matter of importance to determine the varieties of anopheles in that region, their bionomics, the species hospitable to malaria and those which can not transmit it. The English investigators, James, Christophers and Stevens, observed that different species of anopheles had different degrees of susceptibility to malaria; certain species were natural transmitters of malarial fever, while others were rarely, if ever, found infected naturally, although it would be possible to infect them under laboratory conditions. It is important, then, to determine what varieties of anopheles are present and which ones may act as the intermediary hosts in the transmission of malarial fever; this is particularly true when the malaria-transmitting anopheles have different breeding habits from those which are not responsible for the spread of malarial fever. Various observers have published notes on the breeding habits of anopheles. It may be said that there is as much selection of breeding-places by anopheles as there is selection of feeding-grounds by fish. Trout, salmon and bullheads have their analogues among anopheles larvæ, some requiring fresh aerated water, or water containing much green algæ; others select tree-holes and the recesses of epiphytic tree-plants, such as bromelias, as breeding-places; while others preferring fresh aerated water are so adaptable that they will breed in brackish water, containing half its volume of sea-water; some species require plenty of sunlight, while other sylvan species prefer shady pools in which chlorophyl-bearing algæ are relatively absent.

The identification of mosquitoes used in these experiments has been corrected or verified by Mr. A. H. Jennings, and his identifications are being checked in the Bureau of Entomology, U. S. Department of Agriculture, Washington.[1]

Notes on the species of anophelines in the Canal Zone, their relative numbers and breeding habits, were published by Mr. August Busck of the U. S. Bureau of Entomology in May, 1908. Eleven species of anophelines have been collected in the Canal Zone. Of these eleven species the three commonest ones are *A. albimanus*, *A. pseudopunctipennis* and *A. malefactor*. *A. albimanus* is much the commonest anopheles in the Canal Zone and is the one oftenest taken in quarters and barracks, although the proportion of one species to another varies somewhat with the season and locality. In certain villages only *A. albimanus* is taken in barracks, while in other villages from 5 to 10 per cent. will be *A. pseudopunctipennis*, and at Ancon during October, 1908, 27.5 per cent. were *A. malefactor* and 72.5 per cent. were *A. albimanus*. Tree-breeding species are rarely encountered and I know of no instance in which specimens of this species have been taken in quarters. The female anopheles visits quarters to obtain blood, which is necessary for the development of her ova. When specimens of *A. albimanus* (males and females), placed in a large comfortable breeding-jar with sufficient vegetable food, such as dates and bananas, were permitted to pair, the ovaries of the females showed no development within fifteen days.

The experiments were begun in October, 1908, during the rainy season and discontinued in February, 1909, during the dry season. Mosquito larvæ were collected by sanitary inspectors at various places in the Canal Zone. On being received at the laboratory, larvæ and algæ were placed in moist jars on a table in front of a window with an eastern exposure so that they got direct sunlight for an hour or two in the morning. Predaceous larvæ were killed and removed from the breeding-tanks. A preliminary difficulty was experienced in the gradual fouling the water of the tank; this was obviated in a very simple way by passing air bubbles through the water with a Paquelin cautery bulb. In this way the water was kept fresh and the larvæ remained vigorous. After the larvæ had pupated they were placed in breeding-out tubes plugged with cotton, and after twenty-four or forty-eight hours the newly emerged mosquitoes were transferred to jars made of lantern chimneys, covered with crinoline gauze, where they might pair and be kept for biting. Females would bite twenty-four to forty-eight hours after emerging; frequently on successive and always on alternate nights for a period of at least fifteen days. The species of anopheles used were *A. albimanus, A. pseudopunctipennis, A. franciscanus, A. argyritarsis, A. malefactor* and *A. apicimacula*. These mosquitoes fall into three groups: the white hind-footed group; the uniformly colored group; and the spotted-legged group.

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Dr. H. G. Dyar has since verified all our identifications save one rubbed specimen which is probably *A. apicimacula*.

A series of bitings were conducted on suitable infected patients who were carrying estivoautumnal or tertian gametes in their peripheral blood, using four varieties of mosquitoes. Out of several hundred mosquitoes used in the biting experiments, 100 mosquitoes were dissected, and of these 70.8 per cent. of *A. albimanus* became infected; 12.9 per cent. of *A. pseudopunctipennis* became infected, and none of *A. malefactor* (17 mosquitoes used) became infected, although several of the latter were purposely placed in jars with *A. albimanus* and bit at the same time persons from whom the specimens of *A. albimanus* became infected.

It is concluded from this series of biting experiments that *A. albimanus*, the common white hind-footed mosquito—an extremely hardy, vigorous, rapidly developing, adaptable mosquito—is the transmitter of estivoautumnal and of tertian malarial fever in the Canal Zone at this time. Specimens of this species infected with tertian parasites became infective between nine and eleven and a half days after the first feeding. When infected by estivoautumnal parasites, sporozoites appeared in the salivary glands as early as the eleventh day in some mosquitoes and later than twelve and a half days in others. *A. malefactor* is not concerned in the transmission of malarial fever in the Canal Zone at this time. *A. pseudopunctipennis* is only slightly concerned in the transmission of malarial fever; this appears not only from the fact that only four out of thirty-one mosquitoes under the most favorable artificial conditions became infected, but from the additional fact that relatively few specimens are taken in quarters at the present time.

The English investigators appear to have made no attempt to determine the limits of infectiousness of man in malarial fever. To me this appeared to be, if possible, worth determining, because in the discharge of patients from the hospital it would be manifestly unwise to turn a patient out, although free from symptoms yet with gametes enough in his peripheral blood to infect every susceptible anopheles mosquito that might bite him. Efforts to determine the limit of infectiousness of man were made in the following way:

In the 47 biting experiments, several blood preparations were taken fresh and for staining, at the time of the biting. Differential counts of leucocytes and the ratio between crescents and leucocytes were determined the next morning. Leucocyte counts were occasionally made at the time the blood was taken so as to check this method of estimating the crescents. In this way it was always known how many crescents were in the peripheral blood per c.mm. at the time the mosquito was infected. The next step was to weigh a number of mosquitoes before and after biting in order to estimate the amount of blood retained by a mosquito. In this way the approximate number of gametes ingested could be calculated. Again, smears were made from the midgut of mosquitoes that had a few minutes before bitten a person whose blood contained numerous gametes. From this it was found that about one-half the gametes were phagocyted by polymorphonuclear leucocytes and thus destroyed. Finally, mosquitoes which had fed but once on patients whose crescents per leucocytes had been estimated were fed subsequently on dates, and on dissection of these mosquitoes the probable limit of infectiousness was determined as being near one gamete per 500 leucocytes. From these observations, I am confident that a patient with more than one crescent for every 500 leucocytes, or 12 crescents per c.mm., is infective, and it follows that such an individual should not be discharged from treatment in that condition or should be warned or required to continue treatment. Such a person is a gamete-carrier and is a menace to a malarial community whenever susceptible anopheles have access to him.

The effect of quinin administration on the number of gametes in the peripheral blood was studied in a number of patients suffering from estivoautumnal and tertian fever by the administration of 30 grains quinin daily, either with or without iron and arsenic, and by withholding quinin and merely requiring rest from labor. In estivoautumnal infections, when there were crescents in the blood, the number was reduced by quinin, 30 grains daily, at the following rates. For example, in Experiment 17 there were:

9 crescents per 100 leucocytes on December 26
5 crescents per 100 leucocytes on December 27
5 crescents per 100 leucocytes on December 28
4 crescents per 100 leucocytes on December 30
1 crescent per 100 leucocytes on December 31
0 crescents per 100 leucocytes on January 2
0 crescents per 100 leucocytes on January 13

In Experiment 20 the crescents were reduced from 67 per 100 leucocytes to one per 200 leucocytes in twenty-five days.

In Experiment 41 crescents were reduced from 92 per 100 leucocytes to one per 100 leucocytes in fifteen days; while, on the other hand, in Experiment 6, when quinin was withheld, crescents remained constantly in the peripheral blood for twenty-three days, there being 16 crescents per 100 leucocytes on admission and 20 crescents per 100 leucocytes at the end of the period.

From this it is concluded that generous daily doses of quinin, grains 10 t. i. d., will reduce the sexual forms of the estivoautumnal parasite to a non-infectious minimum in from a few days to two or three weeks, depending on the severity of the infection.

In tertian malarial fever there is never an abundance of gametes in the peripheral blood after the disappearance of the asexual forms such as is seen in estivoautumnal infections; besides, all forms of the tertian parasite disappear from the peripheral blood within two or three days under quinin treatment and occasionally disappear when quinin is withheld.

A curious relation was observed between the average number of days that gametes remained in the blood in estivoautumnal and tertian infections when under quinin treatment, the number being about ten in estivoautumnal and three in tertian, and the average proportion of the incidence of estivoautumnal to tertian malarial fever in the Canal Zone. This might be interpreted as indicating that the proportion of cases of estivoautumnal to tertian malaria depends on the number of days that gametes are in the peripheral blood in numbers sufficient to infect *A. albimanus*, which is the host for both forms of the parasite.

The infection of *A. albimanus* and the development of malarial parasites in her midgut is not interfered with by quinin when such an infected mosquito feeds daily or on alternate days for fifteen days on patients who are receiving 30 grains of quinin in solution daily. In these instances the zygotes mature and sporozoites reach the salivary glands in the usual period.

Observations on latent malaria were made during the past dry season in several villages where the malarial sick-rate did not fall to zero and where no anopheles were breeding. On a systematic blood examination of laborers and their families, I found that 10 per cent. of men who were at work without symptoms had parasites. Three per cent. of the cases of latent malaria were of the estivoautumnal variety and 7 per cent. of the tertian variety. Among the families of Spanish and West Indian laborers the amount of latent malaria was 30 per cent. A few cases of fever would arise from this source every week, probably following some loss of resistance caused by dissipation, wetting or overheating. It is this latent malaria in every tropical community which contributes largely to the preservation of the malarial parasite and to the infection of anopheles when, after the onset of the rainy season, mosquitoes have begun to breed in numbers.

The theories of Mannaberg and Craig explain the persistence of latent malaria by the process of conjugation of two ring forms within a red blood corpuscle. During examinations of the blood, in cases of latent malaria, I have frequently seen estivoautumnal crescents which had apparently been formed by the fusion or conjugation of two ring forms, or of two pigmented forms, but I have also very frequently seen in estivoautumnal and tertian malaria red blood cells infected by two or more ring forms which have gone on to maturity without conjugation. Sometimes these contiguous parasites were of the same age, but oftener one would be a little older.

Quinin administered in latent malaria appears to destroy the ring forms only and prevents the possibility of their development into gametes. The gametes in the blood stream are probably phagocyted by splenic and hepatic endothelial cells and are not influenced by quinin directly.

The points I wish to emphasize are these:

A. albimanus, the common white hind-footed anopheles, is the host for estivoautumnal and tertian malarial parasites in the Canal Zone at this time.

A. malefactor, notwithstanding its name, does not transmit malarial fever.

A. pseudopunctipennis is only slightly concerned in the transmission of malarial fever.

In the efforts at mosquito destruction, the extermination of *A. albimanus* is of paramount importance.[2]

Patients having crescents or tertian gametes in their peripheral blood should not be discharged from the hospital, nor should treatment be discontinued until gametes have been reduced to a non-infectious minimum. The destruction and prevention of development of the sexual parasites in man is of great importance and may be accomplished (1) by appropriate quinin treatment of all gamete-carriers entering the hospital; (2) by occasional quinin treatment to destroy latent malaria; (3) by the periodical blood examination of laborers in quarters where there is a high malarial rate for the detection of gamete-carriers and latent malaria in order to carry out appropriate treatment.

Thirty grains of quinin sulphate in solution daily is an efficient dose for the purpose required.

Ancon Hospital.

ABSTRACT OF DISCUSSION

DR. JOHN A. WITHERSPOON, Nashville, Tenn.: We all know now that the malarial parasite is really carried by the mosquito. I have been especially interested in the attacks made on the anopheles in the Canal Zone and the special methods used. It seems to me that the great work in the Canal Zone, especially in carrying out the discoveries of Ross, means much for the future, not only for the preservation of life of the people, but for the natural resources of the country. It solves the problem of *what to do with the products of that country*; it solves the problem of how the Canal Zone can be peopled. Nothing could be accomplished without these important discoveries. I think the people owe a debt of gratitude not only to Colonel Gorgas, but to men like Dr. Darling and others who are working there every day. The excellent work that is being done in the Ancon hospital is a credit to any country; the work done in the Canal Zone is a credit to the nation.

DR. SEALE HARRIS, Mobile, Ala.: It seems to me that we should apply the lessons learned in the Canal Zone to our own country. The majority of us who treat malaria cease giving quinin after the patient has been relieved of his fever. In order to prevent other mosquitoes becoming infected, I think it would be well to continue the use of quinin for a considerable length of time. Note the antimalarial work that has been done in Italy in the last five years; the death-rate there from malaria has been reduced two-thirds by this crusade, which was carried on with the idea of preventing the mosquito becoming infected. After the patients were free of fever for some days, after a sufficient dose of quinin had been given to relieve the paroxysms, quinin is given in small doses, 6 grains a day, for a period of at least three months. It seems to me that in the treatment of malaria we should use exactly the same methods to prevent others from becoming infected, as with patients afflicted with yellow fever. Malaria and yellow fever are diseases, so far as their transmission is concerned, of much the same character. Both are transmitted by the mosquito. If we use the same measures in malaria as are used in Italy, I think we can reduce the number of cases of malaria very materially. In handling a patient with malaria, the first thing to do is immediately to isolate him by placing him under mosquito bar, or in a house where the mosquitoes cannot gain entrance. Individuals who have been exposed should receive prophylactic doses of quinin. The medical profession should begin an active crusade against malaria in this country. It means a great deal to us. When we consider that the number of deaths from malaria is probably 15,000 per annum and that several millions of people in the United States are affected by that disease, we realize the importance of the disease and we should at once institute a crusade against it. I am sure that such a crusade, carried out as it has been in Italy, will give results as good as have been obtained there.

Collections of Medical Books.—Our German exchanges comment with envious approval on the fine medical library of the College of Physicians in Philadelphia, with its 100,000 volumes, most of which are said to be the gifts of members. The *Münchener medizinische Wochenschrift* exclaims: "How much we can learn from our American cousins! With a few exceptions, which we gratefully appreciate, the books left by German physicians on their decease find their way to the second-hand bookstores to which they are sold for a song and the collection is dispersed, while if they were bequeathed to some medical library they would keep their former owner's memory in honor while benefiting the profession at large."

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[2] I have since determined that *A. tarsimaculata* also transmits estivoautumnal parasites. This mosquito belongs to the white-hind-footed group and has recently been breeding in rather large numbers in brackish water near Colon.

THE VALUE OF ALIMENTARY LEVULOSURIA IN THE DIAGNOSIS OF HEPATIC CIRRHOSIS [*]

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Any condition bringing about macroscopic or microscopic changes in an organ must of a necessity be accompanied by disorders of the normal function of that organ. On the other hand, there are some functional disturbances of the body and its organs, collectively and individually, which so far as we know are unaccompanied by any microscopic or macroscopic alterations of structure. Investigators interested in this particular field are devoting more and more attention to the functional consequence of organic disease. We are not content now simply to make a clinical diagnosis of a condition, but we demand to know what physiologic change is brought about by the morbid process we are studying. When it is recalled to what extent the literature has been enriched by the reports of investigators, in regard to testing the function of various organs, the publications pertaining to methods for determining disturbed hepatic function seem insignificant. The nervous and cardiovascular systems have been systematically studied; the lungs have received some attention; the stomach, the intestines and the kidneys are claiming their quota of experimental and clinical work, and functional tests for all are described, confirmed and constantly used by the foremost clinicians. Yet, despite the inestimable advantages which we have derived from some of these tests, we seem to know of none we can call to our assistance to aid us in diagnosing cases of functional disturbances of the liver.

Investigators there have been who claimed to have found clinical tests for such conditions, but one by one these have fallen into oblivion for want of confirmation. The following may be cited as illustrations:

The toxicity of the urine was thought by Bouchard[1] to be an indication of hepatic insufficiency. Schapiro,[2] in studying the question of prognosis in liver cirrhosis, stated that he found a more rapid output of strychnin, given in medicinal doses, in liver cirrhosis than normally. He also states that he found glycosuria followed 200 to 250 gm. of sugar given in the form of fruit preserves to cirrhotics, a fact which he did not properly interpret, and to which I shall refer again. Schwarz[3] eight years later, made some experiments based on Minkowski's observations that after liver extirpation lactic acid appeared in the urine. He gave 15 gm. sodium-lactate and determined the time of the appearance and the amount of lactic acid. Schwarz found that cirrohsis and functional disturbances did not affect the output, but that the lactic acid appeared later than normally, and concludes that it may be explained on mechanical rather than on chemical grounds.

The most marked advance on our knowledge of the subject we owe to Strauss,[4] who approached the question from three points of view:

1. Detoxicating process.
2. Protein metabolism.
3. Carbohydrate metabolism.

1. *Detoxicating Process.*—He observed an increase of fatty acids in the urine of cirrhotic patients. Munk some time before had found that the toxicity of a soap solution was two and one-half to three times as great when it was injected into the great body veins as it would be if it were injected into the portal veins, owing to the detoxicating action of the liver. Based on this report, Strauss gave 20 gm. sodium butyrate in 8 cases: 5 cirrhosis, 2 carcinoma and 1 chronic obstruction of the common duct. In 6 cases he found increase of fatty acids, in 1 of carcimona and in 1 of obstruction, no increase; but he lays no importance on this, as the same was observed in fever, lead-poisoning and diabetes. He regards the test as valueless.

2. *Protein Metabolism.*—With protein metabolism he had no definite results, and he believes that the study of the relation of urea to total nitrogen is worthless as a test.

3. *Carbohydrate Metabolism.*—This part of his study was based on the research of Sachs,[5] who, working under Strauss' direction, found that in frogs, after extirpation of the liver, there was a lessened tolerance for levulose, but not for dextrose, galactose and arabinose. Sachs made some clinical experiments and found that healthy individuals, as well as diabetics, stood levulose better than dextrose, whereas in liver diseases the tolerance to the same amount of levulose was very much diminished. In a later paper Sachs[6] showed that only the liver was able to form glycogen from levulose, the muscles having no such property, so that it was fair to assume that alteration in hepatic function would be expressed in a diminished tolerance for levulose.

Strauss followed up this very broad hint in 87 cases, 58 of the subjects being healthy as to their liver, clinically, and 29 hepatic cases. Of the latter, 26, or 90 per cent., showed levulosuria, while of the healthy subjects 6 showed levulosuria, giving a percentage of 10. Strauss thinks that this 10 per cent. error—one might call it—may possibly be no error, as there was no way of knowing, apart from clinical study, whether there was any latent disease of the liver or not. In fact, 2 subjects were drunkards, and suffering from obesity and gout; 1 had pneumonia (Rosenberger[7] found levulosuria to occur quite frequently in this condition) showed chronic fever, 1 anemia from gastric hemorrhage, and 1 had some hepatic congestion secondary to mitral stenosis.

In the cases of liver disease not showing levulosuria 1 was atrophic cirrhosis with severe diarrhea interfering with absorption of levulose; the second was acute cholecystitis of two days' duration; and the third was a cyst of the liver.

Furthermore, Strauss found two cases of diabetes showing levulosuria, which is remarkable, as ordinarily diabetics excreted more dextrose after levulose ingestion.

Unlike most observers advancing a new idea, Strauss says that not too much weight should be placed on the test alone, but *that a final diagnosis should be made* only after careful weighing of the data derived from clinical and laboratory examinations. He made eight observations with 150 gm. cane-sugar and found once glycosuria, four times levulosuria, once saccharosuria and two negative.

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[*] Read in the Section on Practice of Medicine of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[*] From the private laboratory of Dr. John H. Musser.

[1] Bouchard: Quoted by Strauss, Deutsch. med. Wchnschr., 1901, pp. 757 and 786.

[2] Schapiro: St. Petersburg. med. Wchnschr., 1891, p. 241.

[3] Schwarz: Wien. med. Wchnschr., 1899, p. 1754.

[4] Strauss: Deutsch. med. Wchnschr., 1901, p. 757.

[5] Sachs: Ztschr. f. klin. Med., 1899, 38, p. 87.

[6] Sachs: Ztschr. f. klin. Med., 1900, 41, p. 434.

[7] Rosenberger: Deutsch. med. Wchnschr., 1906, p. 994.

In 20 liver cases he found alimentary dextrosuria but once, which is in marked contrast to the French observers, who found it quite a usual occurrence. This discrepancy is best explained by the fact that these men used cane-sugar as a test instead of dextrose (see Schapiro[2]). DeHaan[8], in fact, reported 29 cases studied with regard to the assimilation of glucose and found 18 positive and 11 negative, but his own statement of having used 150 gm. of cane-sugar, and only in doubtful cases having recourse to the polariscope, robs his paper of any scientific value. Lépine[9] shares this view, and in his article he contributes one case of liver disease showing alimentary levulosuria.

Bruining[10] studied 21 hepatic cases with levulose, saccharose and glucose. Of the 12 cases studied with levulose, he found 10 (all cirrhosis) positive and 2 negative. Of these two, one was carcinoma of the stomach and liver, with absence of free hydrochloric acid and much lactic acid, which he thinks interfered with absorption of levulose; the other case was one of cirrhosis. Here, then, in 11 cases of cirrhosis he found 10 positive with levulose, or 90 per cent., corresponding exactly with Strauss' figures; and Bruining lays great stress on the importance of this test. With saccharose, it might be stated, he got 13 positive glucose reactions. He hints at the future possibility of diagnosing liver diseases by the way various sugars are utilized, and reports cases, one beginning cirrhosis, one of catarrhal icterus, and one in which there was no alimentary glycosuria or levulosuria, but after saccharose there appeared glycosuria in all three. He does not explain this apparently strange phenomenon.

Baylac and Arnaud[11] in the same year at the French medical congress, held in Toulouse, made a report on the clinical value of alimentary levulosuria, based on the study of 23 liver cases. Of these 21 showed levulosuria, or a percentage of 91 positive reactions. Of 20 cases presenting no symptoms referable to the liver, they found alimentary glycosuria in 7, or a percentage of 35, which is in marked contrast to the 10 per cent. of Strauss. Baylac and Arnaud guardedly add, that as these apparently liver-healthy cases occurred in hospital patients, it may be that there was some derangement of hepatic function, which would account for some of the reactions.

Landsberg[12] the next year gives his experience with 21 cases of liver disease, only 9 of which or 43 per cent. gave a positive result.

TABLE 1.—LEVULOSURIA IN 21 HEPATIC CASES (LANDSBERG)

Disease.	No. cases.	Pos.
Carcinoma	4	1
Cirrhosis	11	4
	2	2
	1	0
	1	0
Chronic obstruction of common bile-duct	2	2
	21	9

To prove his point regarding the futility of levulose as a test, he gave levulose to seven healthy persons. He obtained positive results in four, and concluded that Strauss probably took far-advanced cases for his series, in which a collateral circulation had been established, and that in this way there was rapid entrance of levulose into the blood and urine. On these seven cases he makes the rather bold assertion that as the test is positive in health, it has no value clinically, adding that he believes idiosyncrasy plays more of a rôle in alimentary levulosuria than does functional disease of the liver.

Although hardly bearing on this subject, an observation of Samberger[13] has some significance. Briefly stated, Samberger endeavored to prove that the urobilinuria seen so often in syphilis was of hepatic origin, and selected as his vehicle levulose as recommended by Strauss, with results in accordance with Strauss, Sachs Bruining and others, i. e., urobilin was present in those cases which showed levulosuria.

In 1904 Chajes[14] collected all reports on alimentary levulosuria published up to that time, adding 21 normal cases, showing only one positive levulose reaction. He includes in his table 16 cases published by Ferannini with 11 positive reactions or 69 per cent. Of 84 reported cases of clinically diseased livers, Chajes found 86 per cent. showing alimentary levulosuria; of 99 sound as to their liver, 15 per cent. showing alimentary levulosuria. He concludes the former is about the percentage of alimentary levulosuria.

Von Halász[15] criticizes Strauss' work, as he thinks that the patient might have had a low assimilation limit for all sugars, but he confirms Strauss' observations and those of other writers. Von Halász thinks the test of great service in deciding between cirrhosis and other conditions, and states that normally 100 gm. levulose rarely causes levulosuria; a positive result therefore suggests a diffuse and consequently severe disease of the liver, especially indicative of cirrhosis.

The method of examination adopted in this series was as follows: No food was given the patient after the evening meal. The patient voided his urine at a stated hour the next morning, after which, on a fasting stomach, he was given 100 gm. of levulose dissolved in 500 c.c. tea or water according to taste, the whole amount being taken within fifteen minutes. At the termination of each hour thereafter, for four consecutive hours, the urine was collected in four separate bottles, after which breakfast was eaten. It was impossible in some instances to obtain urine each hour, in which case collections every two hours had to be resorted to. Each specimen of urine, including that passed before the beginning of the test, was examined separately by the Fehling, Nylander, Seliwanoff, and fermentation tests, and the combined urine with the exception of the urine before the ingestion of levulose, by the above tests, and in addition by Rosin's method and by the polariscope. As the number of cases increased the spectroscopic examination was omitted. Despite the criticism lately directed against the Seliwanoff reaction by Borchardt,[16] I regard the test as a very useful one, and so far in my experience the disturbing factors mentioned by him have not been met with. Reliance was not placed on this reaction alone, and the presence of levulosuria was accepted as certain, only when there was reduction of the Fehling's and Nylander solutions, fermentation with yeast, a positive Seliwanoff test, and left rotation with the polariscope.

In performing the Seliwanoff test care must be taken not to confuse the rose tint obtained with many urines by boiling with hydrochloric acid, with the typical color reaction due to levulose. In the first instance the shade of red is very light, and fades away entirely on standing or on cooling, while the color in the latter case is a dark magenta red, clouding the entire specimen of urine and deepening on standing or on rapid cooling. The color due to levulose persists for days and there is deposited on the bottom of the test-tube a dark red precipitate.

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[8] De Haan: Arch. f. Verdauungskr., 1898, iv, 4.
[9] Lépine: Semaine méd., 1901, p. 105.
[10] Bruining: Berl. klin. Wchnschr., 1902, No. 25.
[11] Baylac and Arnaud: Compt. rend. Congr. franç. de. méd. Toulouse, 1902, ii, 98.
[12] Landsberg: Deutsch. med. Wchnschr., 1903, p. 563.
[13] Samberger: Arch. f. Dermatol. u. Syph., 1903, p. 89.
[14] Chajes: Deutsch. med. Wchnschr., 1904, p. 696.
[15] Von Halász: Wien. klin. Wchnschr., 1908, p. 37.
[16] Borchardt: Ztschr. f. phys. Chem., 1908, p. 241.

The cases reported in this paper number thirty-two, and most were seen in the private practice of my chief, Dr. Musser, and in his wards at the University and Presbyterian hospitals. Additional cases were furnished me by Dr. Alfred Stengel, Dr. James Tyson, Dr. D. F. Woods, Dr. E. J. G. Beardsley, Dr. J. H. Musser, Jr., Dr. W. Taylor Cummins, and Dr. M. Solis-Cohen, to all of whom I wish to acknowledge my great indebtedness.

In the first ten cases the tolerance for glucose and saccharose in addition to levulose was tested, but this necessitated so much inconvenience on the part of the patients that it was omitted in the remaining twenty-two cases. I believe, nevertheless, that in all instances in which alimentary levulosuria can be demonstrated, the tolerance for glucose and saccharose should be determined, since there may be, in certain individuals, a normally low assimilation limit for all sugars.

In hepatic disease, after 100 gm. of levulose, the sugar usually appears in the second-hour specimen, after which time it either varies in degree or is absent entirely from the succeeding portions of urine. Strauss has already observed this phenomenon. The appearance of levulose is tardy and of short duration in cases in which the liver is but moderately affected; it is, however, rapid, intense and prolonged in cases of profound alteration, so that alimentary levulosuria may perhaps be regarded as an early symptom of hepatic disease (cf. Baylac and Arnaud[11]).

I was unable in the majority of instances to confirm the diagnosis by postmortem examinations, so it was impossible to control the extent of the hepatic lesion, but judging from the clinical course of the individual cases, I believe the inference to be drawn from the early or late appearance of levulosuria, as stated above, is correct.

As will be seen from a study of the table, all of the cirrhosis patients exhibited alimentary levulosuria, the early appearance coinciding with severe disorders and the tardy appearance with the clinically mild affections.

One case (No. 3) of marked fatty degeneration (autopsy) showed levulosuria in the first hour.

All of the six subjects of hepatic enlargement due to chronic passive congestion assimilated 100 gm. of levulose easily. In these cases the tolerance was of considerable assistance in arriving at a proper diagnosis.

One patient with ovarian cyst (No. 26; operation) had certain symptoms of cirrhosis, but showed no alimentary levulosuria, and at operation the liver was found to be apparently healthy.

Levulose was given by mistake to the diabetic patient (No. 22) instead of to another patient in the same ward. There was a marked intolerance, which is the more remarkable as diabetics are supposed to utilize levulose well (Külz,[17] etc.).

Alimentary levulosuria was present in one case (No. 27) of catarrhal cholangitis in which a cirrhosis could not be excluded.

The one patient (No. 31) with supposedly syphilitic cirrhosis utilized levulose perfectly. The clinical diagnosis was at first carcinoma of the liver, but was later changed to the one given in the table.

Patient 32 (carcinoma of the gall-bladder) excreted levulose in the last two hours following ingestion of the same.

TABLE 2.—LEVULOSURIA IN 32 PATIENTS
(100 Gm. Sugar Administered in Each Case)

Cases.	Form of Sugar.	Excretion by hours 1	2	3	4	Diagnosis.
1	Levulose	—	0	++	+	Cirrhosis
	Glucose	0	+	++	0	
	Saccharose ..	0	0	0	0	
2	Levulose	+	+	0	0	Cirrhosis
	Glucose	0	0	0	0	
	Saccharose ..	0	0	+	+	(levulose test)
3	Levulose	+	++	0	0	Fatty degeneration
	Glucose	0	0	0	0	
	Saccharose ..	0	0	0	0	
4	Levulose	0	+	+	—	Cirrhosis
	Glucose	0	0	0	0	
	Saccharose ..	0	0	0	0	
5	Levulose	0	++	+++	+	Cirrhosis
	Glucose	0	0	0	0	
	Saccharose ..	0	0	0	0	
6	Levulose	+	++	+	+	Cirrhosis
7	Levulose	+	+	+	+	Cirrhosis
8	Levulose	—	0	0	+	Cirrhosis
9	Levulose	++	+	+	—	Cirrhosis
10	Levulose	+	0	0	+	Cirrhosis
11	Levulose	+	++	+	+	Cirrhosis
12	Levulose	+	+	++	0	Cirrhosis
13	Levulose	+	++	+	0	Cirrhosis
14	Levulose	+	++	+	0	Cirrhosis
15	Levulose	+	0	+	++	Cirrhosis
16	Levulose	+	+++	+	0	Cirrhosis
17	Levulose	0	+	+	0	Cirrhosis
18	Levulose	—	+	+	+	Cirrhosis
19	Levulose	0	—	+	0	Cirrhosis
20	Levulose	0	+	++	+	Cirrhosis
21	Levulose	+	++	+	+	Cirrhosis
22	Levulose	+	++	+++	+	*Diabetes*
23	Levulose	0	0	0	0	Myocarditis with secondary hepatic congestion
	Glucose	0	0	0	0	
	Saccharose ..	0	0	0	0	
24	Levulose	0	0	0	0	Tricuspid insuf. with hepatic congestion
	Glucose	0	0	0	0	
25	Levulose	0	0	0	0	Chronic Pass. cong. Myocarditic Nephritis
	Glucose	0	0	0	0	
	Saccharose ..	0	0	0	0	
26	Levulose	0	0	0	0	Ovarian cyst
	Glucose	0	0	0	0	
	Saccharose ..	0	0	0	0	
27	Levulose	0	++	++	+	Catarrhal Cholangitis. Cirrhosis (?)
28	Levulose	0	0	—	—	Chronic Pass Cong. Myocarditis
29	Levulose	0	0	0	0	Chronic Pass. Cong. Nephritis
30	Levulose	0	0	0	0	Nephritis. Chr. Pass. Cong.
31	Levulose	0	0	0	0	Syphilitic Cirrhosis (?)
32	Levulose	0	0	+	+	Carcinoma of Gall bladder
	Glucose	0	0	0	0	
	Saccharose ..	0	0	0	0	

SUMMARY

DIAGNOSIS.	TOTAL.	POSITIVE.	NEGATIVE.
Cirrhosis	20	20	0
Cirrhosis (?) Syphilitic	1	0	1
Fatty [illegible]	1	1	0
Chroni [illegible]	6	0	6
Catarr [illegible] (?) ..	1	1	0
Carcinoma of Gall-Bladder..........	1	1	0
Ovarian Cyst	1	0	1
Diabetes Mellitus	1	1	0
Total	32	24	8

Percentage Positive Reaction.............................75
Percentage Positive Reaction in Cirrhosis...............100
Percentage Positive Reaction in Chronic Passive Congestion.. 0
Percentage Positive Reaction in Disease of Liver, Bile-Ducts and Gall-Bladder 97
Percentage Positive Reaction in Non-Hepatic Disease 12.5

CONCLUSIONS

1. Alimentary levulosuria is almost a constant phenomenon in cirrhosis of the liver.

2. The early or late appearance of levulose may be regarded as a sign of severe or mild hepatic disease.

3. Alimentary levulosuria is a useful aid in diagnosing between cirrhosis on the one hand and chronic passive congestion on the other.

4. A study of the hepatic function with glucose and with saccharose in addition to levulose is to be desired, inasmuch as there may be an individual intolerance to carbohydrates.

5. While not indicative of any specific organic lesion of the liver, alimentary levulosuria is most frequently observed in cirrhosis.

248 South Twenty-first Street.

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[17] Külz: Quoted by von Noorden, Handbuch der Pathologie des Stoffwechsels, 1907, ii, 53.

ABSTRACT OF DISCUSSION

Dr. De Lancey Rochester, Buffalo: Did Dr. Goodman find the reaction positive in cases of mixed cirrhosis and passive congestion?

Dr. J. R. Williams, Rochester, N. Y.: I have attempted to examine some cases in the way described by Dr. Goodman, with unsatisfactory results. Investigations of this sort may easily be carried on in an endowed hospital, but sometimes they are not practicable in private practice. For example, levulose costs about 80 cents an ounce, making the cost of a single examination about $2.50, obviously a prohibitive cost to the general practitioner. I have attempted to carry out the test using honey instead of levulose; honey contains approximately 50 per cent. of levulose. My experience with it is too limited, however, to enable me to express an opinion as to its value.

Dr. Edward H. Goodman, Philadelphia: It was impossible in my series of cases to control the clinical diagnosis by autopsy, so I can not say just how extensive the hepatic lesion was. I obtained levulose from Schering & Glatz of New York, one pound costing $1.60.

WATER CONTAMINATION ABOARD SHIP AND ITS PREVENTION

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There are four methods of supplying drinking-water aboard ship. The first is the storage of the water in tanks and barrels which have been filled over the side from some regular supply, such as a water-boat which has run alongside. By the second the water is pumped in, or otherwise forced into the tanks, through a hose, from a city supply, over the side. By the third method the ship takes water in midstream, or when out in the lakes, by pumping through the sea-cock. The fourth method is to condense the drinking-water from steam. It sometimes happens that a fifth method of obtaining drinking-water is used by the crew, as, for example, when the ship is lying in fresh water it is common practice for the men to haul a pailful of water over the side, as this is cooler than the water stored in the tanks or barrels.

Of all the methods, it is readily seen that there is only one which can be relied on for purity, namely, the drinking-water from the condenser. All other sources are dangerous to a greater or lesser degree. Especially is this true at the present time, when it is asserted that our Great Lakes have sewage contamination several miles from shore, and most of our great shipping centers have dangerous water-supplies. It is not a surprising statement, then, that seafaring men have considerable typhoid on the Great Lakes. That some of these cases of typhoid are contracted on shore, is probably true, but that most of them originate aboard the boats, from contaminated water, is too evident a fact to be disputed. And this contamination of the water on shipboard is the result of faulty construction and a reckless disregard of sanitary principles, by all the vessels on the Great Lakes, whether private or owned by the government.

I know of no steamer on the lakes that uses a condenser; nor do I know of any boat, of any description, that takes drinking-water over the side except when laid up in the winter. It is, then, fairly safe to say that all drinking-water used aboard vessels on the lakes, for the crews and passengers, is admitted to the boats through the ordinary sea-cocks. And if this is true, then passengers and sailors are constantly drinking water which has passed through pipes that have been lying in sewage while the ship was in port. All water used aboard, for whatever purposes, is pumped through the sea-cocks which perforate the shell of the ship in the bottom, as indicated by the arrow in the diagram, which represents a cross-section of a ship, the sea-valve, pony-pump and pipes to drinking-tanks. Now suppose that valve A is kept closed when not in use—which is never the case except when the boat is laid up for the winter—then when the ship lies in the Chicago River, say, all that portion of the piping and sea-cock, from the bottom of the boat to valve A, stands filled with sewage, or Chicago River water, which is the same. But let us go farther: Suppose that the boat is loaded down so she lies in the water to the depth indicated by B, then the river-water would rise through the sea-cock to the level of B at C. From the sea-cock to the pony-pump is a long stretch of pipe in most steamers, and as the pony-pump is constantly in action to maintain the pressure in the various pipes, and to feed the boilers, it is plain that all this section of pipe is filled with sewage all the time that the boat lies in foul water. It is not hard for one to picture the scum and deposits which form on the inside of this portion of the piping from the sea-cock to the pump; and even though the drinking-tanks are not filled until the ship is well out in clear water, and *not until the* water has been forced through the sea-cock and overboard, until it comes through clean (?), still the very thought that one is drinking water which has passed through a pipe which has but a few hours before been standing full of sewage in which macerated animals and solid fecal matter are churned into solution is, to say the least, just short of nauseating. It is quite certain that the sea-cock and the pipes leading to the drinking-tanks are coated with slime and vegetable growth in which there surely must be the bacterial life common to sewage.

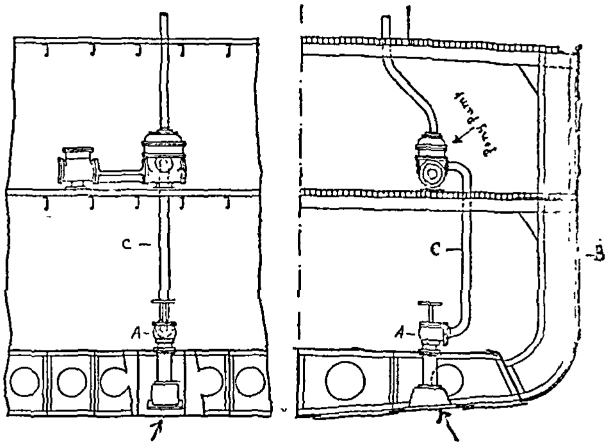

Diagram of a ship, showing method of supplying drinking-water on shipboard; a, valve to shut off river-water; b, c, level to which river-water may rise when boat is loaded down. The diagram shows, on the left, a section taken fore and aft, and, on the right, across the hull.

On certain steamers the water-bottoms are filled through the sea-cocks, and the big iron ore steamers run alongside the docks and as the ore is unloaded the water is let in to trim ship regardless of where the boats are lying. If the boat is lying in the Chicago River, or South Chicago, it makes no difference, for this water is run into the water-bottom, just the same, sewage and all. When unloaded the ship clears for another cargo, holding this water in the bottom, or *pumping it overboard,* as the exigencies of the weather permit, and when the drinking-tanks need filling, a valve is opened, and the tanks filled through the very selfsame sea-cock that was used for filling the bottom with sewage. Clearly the drinking-water for the tanks should not be pumped through the same pipes through which millions of gallons of sewage have just been pouring. It is probably true that flushing these pipes when in clear water does wash out most of the bacterial content which might otherwise cling to the vegetable growth in the pipes, but from any point of view it is absolutely disgusting to think of drinking water which has been pumped through a pipe which in the last few hours has been filled with Chicago or Milwaukee sewage.

The vessels from which the U. S. Public Health and Marine-Hospital Service receives most of its typhoid patients are the passenger boats with short runs. The main reason for this is that these boats lie in the river half of the time, and their pipes are, therefore, more contaminated than those of other ships, and there are greater chances of carelessness, such as leaving open the valves when entering the rivers, etc. It is true that the drinking-tanks are not filled until the boat is well out in clear water, and then some one opens the lateral to the drinking-tanks and lets it run until the tanks are filled. And frequently this valve is left open after the boat has entered the rivers, and the tanks are filled with sewage. If the captain discovers this carelessness, the tanks are immediately emptied and cleaned, but it must often be the case that the men or junior officers who are responsible for such a mistake will keep the matter quiet for fear of reprimand.

The drinking-water is pumped into iron tanks; these are supposed to be cleaned out several times a year, but it is a fairly safe guess that investigation would show that many of them have not been even fairly well cleaned more than twenty times in twenty years. That they are ever thoroughly and safely cleaned is impossible, as any one can easily convince himself of by a personal examination. It is admitted by every well-informed person with whom I have discussed the matter that these tanks become very foul, and are lined inside with vegetable growth and a thick slimy deposit. That typhoid bacilli get into these tanks at various times, in greater or smaller quantities, and that these same bacilli multiply on this fine medium, would seem to be a safe assertion.

Not a few times has the fact been noticed by officers of the Public Health and Marine-Hospital Service that some one particular vessel was sending an unusual number of cases of typhoid to hospital, and when conditions were looked into carefully it has always been found that there was carelessness and lack of sense and cleanliness on the part of the ship's officials. But the prime fault is one of construction, for it is impossible to guard against carelessness in this particular. In the first place, a general pipe system which lets water into the water-bottom, and to the boilers and the sanitary tanks, and the tanks for drinking-water, and through which the decks are flushed down, is a dangerous system.

I have the statement of captains to the effect that it has happened several times that vessels have come to their docks in Chicago or Milwaukee rivers with their drinking-tanks overflowing with dirty water from the rivers, because some careless person has left the valve open, and the constantly working pony-pump has kept pumping water into the tanks after the ship has entered the foul rivers. There is still another method by which the drinking-tanks can be fouled, and that is by leakage past a poorly fitting valve. The fire-drills aboard ship are most often held while in port; and almost all deck washing is done while lying at the wharf. The pony-pump is constantly running, but during fire-drill, and washing down deck with the hose, the big pump is turned in and the greater pressure in the pipes probably causes a certain amount of leakage into the drinking-tanks, past valves which may not be properly seated. This is probably a common occurrence on most boats.

All water aboard ship, for whatever purposes, must first pass through the sea-cock and pipes leading from it, and it must be alarming for one to discover, while a passenger on these vessels, many of which are floating palaces, that he has been drinking water which was introduced into the ship through pipes smeared on the inside with sewage. It cannot be clean, cannot be free from bacterial life and fecal matter. Surely no man would dare say that such water was clean and free from danger.

There are but two practical methods to avoid this contamination. One is to disconnect the drinking-tanks from the other pipes, so that it would be impossible to fill them with foul water accidentally. Then it would be necessary to drop a pipe over the side when out in clear water, and pump the water into the tanks. All the officers with whom I have discussed the matter think that this method would also be objectionable because some one would forget to haul in the pipe that was over the side. In the second method, and the only reliable way to obtain absolutely pure water, is to condense it, as is done by ocean-going steamers. It could be installed on any steamship with comparatively little expense.

403 Iron Block.

LOCALIZED SUBPHRENIC TUBERCULOSIS

EXCISION OF THE TUBERCULOUS MASS; RECOVERY; FREEDOM FROM RELAPSE AT THE END OF TWO YEARS *

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Patient.—Mr. X., a man of 28, came to Colorado in the spring of 1907 with a moderate tuberculous invasion of both lungs. His home was in Boston, and for some months before leaving there he had suffered with pain and discomfort in the region of the gall bladder. A diagnosis of gall-bladder trouble had been made by two physicians and this was confirmed by Dr. Swan of Colorado Springs, through whose kindness I saw the patient. When I saw the young man with Dr. Swan in the latter part of April, 1907, I found him fairly well nourished; his chest trouble was in apparent arrest, he was without fever, he had a good appetite and was possessed of a fair degree of general strength. The pain and discomfort in the region of the gall bladder had recently become more marked. He had had no jaundice; he had not suffered acute pain, but the dull pain and constant discomfort had become a marked and disturbing factor in his daily life. The pain was apt to come on at night and keep him awake.

Examination.—The abdomen was found to be soft; there was no local rigidity. There were no evidences in the region of the appendix. There was moderate tenderness on deep pressure at the site of the gall bladder and this tenderness was constant. This was about the only symptom presented. The diagnosis of probable gallstones was concurred in and operation advised.

Operation.—At St. Luke's Hospital, in Denver, May, 1907; ordinary gall bladder incision. Careful inspection and palpation revealed nothing abnormal in the gall bladder or bile ducts. The cecum and appendix were explored and found to be normal. At about the middle of the liver there were adhesions between it and the anterior abdominal wall. These adhesions were not very dense and were broken through. Small, apparently tuberculous nodules were seen on the upper surface of the liver. On drawing the liver down a caseous mass about as large as the bowl of a dessert-spoon was found between the middle of the upper surface of the liver and the diaphragm and involving both. This was excised with some difficulty and its bed scraped and mopped with carbolic acid and alcohol. Moderate hemorrhage was checked by packing. Outlying nodules were excised. Free gauze packing was placed between the liver and the diaphragm. The remainder of the wound was closed.

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* Read in the Section on Surgery of the American Medical Association, at the Sixtieth Annual Session, Atlantic City, 1909.

The tissue removed was sent to Dr. J. A. Wilder, professor of pathology in the University of Denver, who pronounced it tuberculous.

Postoperative History.—The patient made a smooth convalescence; his sinus became permanently closed at the end of ten weeks. He has had no further trouble in the region of the liver. In February, 1908, he developed moderate appendiceal symptoms and a somewhat thickened appendix was removed, which on pathologic examination was pronounced tuberculous by Dr. Wilder. Since then the patient has had no abdominal symptoms whatever. I examined him recently, two years after the operation on the liver. His lungs are in good condition; his weight, strength and appetite are good; he feels well and enjoys life. There is no hernia at either scar and aside from the scars themselves there are no abdominal evidences. There is no evidence to be discovered of tuberculous peritonitis in any portion of the abdomen. His digestion is good; he has no discomfort.

We have in this case a localized subphrenic tuberculosis. Thorough excision of the tuberculous area was followed by healing. Two years after operation there was no evidence of relapse.

A thorough search of medical literature, in which quest I have had the kind aid of Dr. F. Robbins of New York, fails to reveal a definitely similar observation.

Eisendrath[1] reports a case of general tuberculous peritonitis with a localized subphrenic collection of fluid. Michaux[2] makes a somewhat similar observation. In his case the patient's illness began abruptly with severe dyspnea under the picture of pneumothorax. There were no gastrointestinal symptoms. Edema existed on the right side of the chest, the abdominal wall and the legs. There was a high fever. An incision along the costal arch served to evacuate gaseous pus and opened into a large cavity, reaching as far as the third rib. The operation was followed by marked improvement. The edema diminished, but subsequently an uncontrollable diarrhea developed and the patient died one month after the operation. The autopsy showed the presence of dry tuberculous peritonitis which had given rise to the formation of a subphrenic abscess.

Consideration of subphrenic abscess as a complication of an intrathoracic affection is of interest. According to Archibald,[3] this complication is extremely rare. Among 447 cases compiled by Maydl (1894), Grüneisen, and Perutz, only 21 owed their origin to this cause; including 6 instances of empyema after pneumonia; 7 instances with an unknown source of infection; 1 instance of pulmonary abscess; 2 instances of pulmonary gangrene, and 1 instance of tuberculosis. In the cases compiled by Maydl prior to 1894, with a singe exception, there was invariably found a perforation of the diaphragm. This was not demonstrable in the later cases, treated by operation, showing that the diaphragm is only gradually destroyed, later, at one or more points, as the result of the prolonged contact with the pus.

The mode of passage of the infection from the pleural to the subphrenic cavity is of interest. Küttner[4] seeks an explanation in the course of the lymph current, which was demonstrated by him through careful experimental injections. The lymph channels of the parietal pleura and peritoneal serosa communicate with those of the diaphragm, and in the diaphragm itself exist many perforating lymph vessels, not only in the direction from the peritoneum to the pleura, but also in the opposite direction. According to Burkhardt, the bacteria penetrate through the membranes and muscles by active growth instead of by passive transportation. It is possible that the metastasis is caused in either fashion. This work of Küttner has special reference to the transmission of chronic inflammatory processes from one of the two large body-cavities to the other. Küttner discusses, in the first place, tuberculosis of the serous membranes. He quotes Tilger,[5] who examined the autopsy material of the Geneva Pathologic Institute in regard to the question as to whether tuberculous peritonitis can infect the pleura by way of the diaphragm. Among forty-nine cases of extensive tuberculosis of the peritoneum, he found the pleura to be affected in thirty cases. In almost all of these, however, the pleurisy had originated independently of the peritonitis, or a chain of tuberculous lymph glands could be followed from the abdominal cavity to the thoracic space. It was only in three cases that the pleurisy had been positively transmitted from the peritoneum through the diaphragm. In one instance the peritoneal tuberculosis had led to an affection of both pleuræ; in the other two cases the right pleura alone was infected; here the process was not tuberculous in character, at least not microscopically, and Tilger assumes that only the purely inflammatory factor of the tuberculous peritonitis was transmitted through the diaphragm to the pleura. He regards it as probable that propagation in both cases took place through the lymph vessels of the diaphragm. Tilger thinks that this assumption is favored by the right-sided location of the pleural disease in both cases (relations between the lymph vessels of the liver and the right pleura). It follows, according to him, that the perforating lymph vessels of the diaphragm do not play a very important part in the primary tuberculosis of the serous membranes, but that tuberculous peritonitis and pleurisy should almost invariably be regarded as equivalent affections, arising on an identical basis (polyserositis of Italian authors).

In a general way it may be said that certain clinical cases, otherwise difficult of interpretation, may be explained in a similar manner by the perforating lymph vessels of the diaphragm, which traverse the diaphragm in the direction from peritoneum to pleura and *vice versa,* establishing numerous communications between the two large body-cavities and even providing for their relations with remote regions.

An isolated observation by Muck[6] is as follows: The patient presented bronchial bruits over the lungs and had a slightly febrile temperature. There were no other symptoms suggestive of tuberculosis. Death occurred as the result of exhaustion; at the autopsy old tuberculosis was found in the left apex and a cavity in the right apex; there was a broken-down focus in the right lower lobe. A subphrenic abscess, probably tuberculous, though not microscopically examined, was demonstrated on the right side.

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[1] Eisendrath, Daniel D.: The Acute Forms of Abdominal Tuberculosis, THE JOURNAL A. M. A., Jan. 23, 1909, lii, 291.

[2] Michaux: Bull. et Mem. Soc. de chir. de Paris, 1897, xxiii.

[3] Archibald: Brit. Med. Journal, May 19, 1906.

[4] Küttner: Beitr. z. klin. Chir., 1903, xl.

[5] Tilger: Virchow's Arch. f. path. Anat., 1894, cxxxviii.

[6] Muck: Inaug. Diss., Munich, 1894.

Cornet[7] considers that tuberculous changes in the liver as a sequel to pulmonary phthisis are uncommon. The liver is most frequently affected in general miliary tuberculosis, under the formation of disseminated miliary tubercles, apparently not uncommonly immediately before the death of consumptive individuals. Localized tuberculosis of the liver often appears under the picture of enormous isolated, softened, tuberculous ulcers (Orth, Simmonds, Zehden, Wagner, Clement).

Hepatic tuberculosis originates by the hematogenous route, through the bowel, or through the peritoneum. In addition the hematogenous route practically opens all the organs of the body to the bacilli. This view is supported by Lubarsch,[8] who cites investigations on tuberculosis of the stomach (Simmonds, Bindo de Vecchi) of the heart muscle (de Vecchi), the muscles of the body (Saltykow), etc.

Of contributory interest is the work of Kelynack.[9] In 3,053 autopsies Kelynack found distinct hepatic cirrhosis in 121 instances. In 28 cases (23 per cent.) there existed a *tuberculous infection, either in the shape of active process, latent or old tuberculosis.* Pulmonary tuberculosis was found in 14 cases (12 males, 2 females). Among these cases the lungs and the peritoneum were simultaneously affected in 6 males and 1 female; the lungs alone in 5 males and 1 female; the peritoneum alone in 2 males and 2 females. Latent or old tuberculosis was present in 8 per cent. of the cases. The average age in active tuberculous processes was 45½ years; in tuberculous pulmonary disease, a little above 44 years; in disease of the peritoneum, barely 47 years; in latent or old pulmonary tubercles, a little over 44½ years.

Tuberculous pleuroperitonitis is discussed at length by Zelistratow.[10] Zelistratow gives a brief description of the clinical picture of the disease and five personal observations: One case was associated with general miliary tuberculosis; in another case the pulmonary and intestinal symptoms were so marked that the affection of the pleuræ and the peritoneum was of minor importance only. In Cases 3 and 4, the affection of the pleura and peritonitis were the only symptoms; in Case 5 these were the predominant symptoms.

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7. Cornet: Die Tuberkulose, Vienna, 1907.
8. Lubarsch: Encyclop. Jahrb. d. ges. Heilk., 1904, ii.
9. Kelynack: Med. Chron., January, 1897.
10. Zelistratow: Klin. Jrl. Russ., December, 1901; Centralbl. f. d. Grenzgeb. d. Med. u. Chir., 1902, v.

The Influence of Proteids and Carbohydrates on Metabolism.—It was sought to determine the immediate effects of these two classes of foodstuffs on the products of metabolism. A. Gigon (*Skandin. Arch. f. Physiol.*, 1909, xxi, 351) made observations on himself, which were of ten hours' duration. Every quarter hour during the observations, doses of casein (155.6 gm.), dextrose (460 gm.) and of dextrose and casein (equal to the sum of these two) were administered. The experiments were carried out in the Sondén-Tigerstedt respiration apparatus, and in addition the exchange of nitrogen and phosphorus were determined. It was found that proteids as well as sugar increased the output of carbon dioxid and that the mixture of proteids and sugar increased the output of carbon dioxid to an extent which equaled the sum of the output from sugar and proteids when given separately. The doses of sugar, however, had no appreciable immediate effect on the exchange of nitrogen or phosphorus.

SURGICAL TREATMENT OF TUBERCULOUS PLEURISY, LUNG ABSCESS AND EMPYEMA *

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It is an established fact that at least 70 per cent. of all cases of the serofibrinous type of pleurisy in adults are of tuberculous origin, the figures of various observers varying from 15 per cent. to 82.6 per cent.

I need not here review the literature or quote statistics which establish this fact, since this has only recently been done by Lord[1] and in 1908 by S. Goodall,[2] but I shall briefly discuss the methods by which we may ascertain the true etiology of pleuritic effusions.

We shall here exclude the transudates due to circulatory disturbance, kidney affections, cancer, or injuries to the pleura and confine our study to the forms which are associated with or follow inflammatory diseases of the lungs, pleura or neighboring organs.

Dealing, then, with only inflammatory types of effusions, our first step is to determine what disease is its causative factor. Is it a tuberculous or one of the more acute forms of inflammation, such as lobar or bronchopneumonia, rheumatic arthritis, etc., or a suppurative disease of a neighboring organ, as, for instance, an abscess of the liver, spleen or mediastinum?

Since a large percentage of pleural effusions are associated with pulmonary tuberculosis, we shall naturally suspect most cases to be of such origin and shall search for verification.

METHODS OF DIAGNOSIS

The cytodiagnosis takes first place. It was first advanced by Widal and Ravaut, and verified by many observers, especially by Musgrave,[3] who analyzed seventy-two cases at the Massachusetts General Hospital. Musgrave approved Widal's formulated rules for differentiation, which are as follows:

1. A predominance of lymphocytes in the effusion indicates an early stage of tuberculosis of the lungs.
2. A predominance of polymorphonuclear leucocytes indicates that the effusion is due to an acute infectious process.
3. A large number of endothelial cells occurring in sheets or plaques means mechanical effusion or a transudate.

The tuberculous variety is divided into two classes: a class of cases which are forerunners of pulmonary tuberculosis, at least in which no tuberculous lesion can be discovered by physical examination, called the primary form, and then a group in which the pleurisy is associated with a well-pronounced tuberculous disease of the lung, the secondary form.

In the primary and most common form the lymphocytes predominate. During the first week or ten days in a tuberculous effusion the polynuclear cells may predominate, but these rapidly disappear and give place to a purely lymphocytic form.

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* Read in the Section on Surgery of the American Medical Association, at the Sixtieth Annual Session, held at *Atlantic City*, June, 1909.

* Owing to lack of space the article is here slightly abbreviated. It appears in full in the Transactions of the Section and in the author's reprints.

1. Lord: Treatment of Serofibrinous Pleuritis, Boston Med. and Surg. Jour., April 15, 1909.
2. Goodall, S.: The Relation of Pleurisy to Pulmonary Tuberculosis, Med. Rec., June 27, 1908.
3. Musgrave, P.: Examination of Pleural Fluids with Reference to their Etiology and Diagnostic Value, Boston Med. and Surg. Jour., 1904, pp. 317, 347, 377, 406.

In the secondary form, which is not so frequent (about 1 in 10) the sediment does not contain many lymphocytes, but consists principally of necrotic cells which are not entirely degenerated, the larger percentage being polynuclear.

Next to cytodiagnosis the process of "inoscopy"[4] is of diagnostic value. It enables us to find the tubercle bacilli in the effusion by means of a process of digestion of the fluid before staining.

The method of animal inoculations with the pleuritic fluid is another valuable aid in proving the correct diagnosis, but is, on account of the time required for the test, not very practical.

Another diagnostic aid which has recently become very popular is the tuberculin test, either by the cutaneous, subcutaneous, or conjunctival method. Its true value in this capacity is at the present time a subject of animated discussion in the medical world and will, no doubt, be decided by those who are now testing its reliability in thousands of cases.

The radiograph of the chest has, as yet, not received its merited appreciation as a diagnostic aid. By means of this quite recently developed adjunct we are able to recognize pleural effusion as well as pulmonary tuberculosis in the early stages in the lung, and when the two coexist we have evidence that the effusion is of tuberculous origin.

The literature on the radiograph as a diagnostic aid in diseases of the chest dates back as far as 1896 (Walsham[5]), and its more extensive application has been endorsed and perfected by Rieder,[6] Krause,[7] Holland[8] and many others.

The skiagraph is an accurate record of the presence and location of a lesion or fluid within the chest. Its interpretation is submitted to the acutest of our senses, the sense of sight. The eye, of all the senses, is the least liable to be deceived, and a perfect radiograph, if properly interpreted, is a valuable guide in the early diagnosis of tuberculosis, with or without effusion.

Recently I brought to the attention of the State Medical Society of Illinois an innovation in this diagnostic aid, which enables us not only to discern the earliest signs of tuberculous disease, but also to differentiate an active tuberculous process from a latent one, i. e., *the stereoradiograph of the chest* (Fig. 1). The stereoscopic effect brings into relief the structures of the lesions while the non-stereoscopic, single radiograph shows only a shadow. The active tuberculous process is recognized by dark shadows surrounded by a halo, the latter indicating the infiltrated area around the tuberculous focus.[9]

Quite different is the picture of an old healed tuberculous process, in which only scars remain in the lung tissue as relics of the disease. Here we find the shadows standing out clearly like spiders, surrounded by clear lung tissue.

Summing up our diagnostic aids, the clinical history, the physical findings, the chemical and bacteriological examination of the blood and secretions, the cytodiagnosis, inoscopy, the tuberculin test, animal inoculation and the stereoradiograph as guides in determining the character of pleuritic cases, we proceed to the treatment.

CURRENT METHODS OF TREATMENT

In the treatment there seem to be some inconsistencies. The idea that as soon as an effusion in the chest is discovered its immediate withdrawal is indicated is still too prevalent among practitioners and it is time that the medical profession take some definite position on this question.

In studying the literature of this subject one is impressed by the growing opinion of authorities that the pleural effusion in incipient cases of pulmonary tuberculosis is a factor promoting the cure of the disease. It is asserted that the collapse of the diseased lung produced by the effusion has a highly beneficial influence on the healing process. This, of course, has relation to the unilateral involvement alone, and many instances in which the spontaneous cure has taken place by either a pneumothorax or pleural effusion are reported in medical literature (Späth,[10] Konzelman[11]). The latter recently published twenty-five cases of all stages of pulmonary tuberculosis with intercurrent pleuritic effusion in which fourteen patients recovered and are able to work, and he regards the pleuritic effusion as the factor conducive to the healing of the underlying disease.

Lord, on the other hand, states that of every 10 cases of primary pleurisy 3 or 4 develop pulmonary or other tuberculosis within four to six years, and advises that every case of serofibrinous pleuritic effusion be treated as tuberculosis.

Autoserotherapy in serofibrinous pleurisy was first introduced by Gilbert and Fede,[12] and its efficiency in absorbing the pleuritic exudates has been corroborated by Nasetti[13] and by Schnutgen.[14] It consists in withdrawing by means of a Pravaz syringe 1 c.c. of the serofibrinous exudate and reinjecting the same at once subcutaneously. These injections are made daily for four or five days, according to the severity of the case, and within twelve to fifteen days the fluid in the chest cavity usually disappears. Bad after-effects were not noted. In fourteen out of fifteen cases of serofibrinous pleurisy thus treated by Schnutgen in the clinic of Professor Senator the results were positive.

Whether this form of treatment of removal of the exudate is of permanent value depends on these salient points: Does the disappearance of the fluid also cure the underlying disease, namely, the tuberculosis? Have these patients remained well or have they developed tuberculosis later on? Nasetti and Schnutgen have not made these points clear, except by suggesting that probably through the subcutaneous injection of the exudate a quantity of antitoxic and antibacterial substances gain entrance into the circulation.

Assuming, then, that the pleuritic effusion is conducive to the healing of tuberculous disease of the lung, is it not irrational to advocate its removal or favor its absorption by medical means, except when urgent symptoms, such as difficult breathing, extremely high blood pressure, or disturbance in the circulation, require immediate relief? Then, of course, it is advisable to withdraw a sufficient quantity to establish equilibrium.

The pleuritic effusion should not be regarded a disease. It is in reality a symptom, just as free fluid in the peritoneal cavity is a symptom of tuberculous salpingitis or tuberculous appendicitis. Its removal does not cure the underlying disease; on the contrary, it interferes with the healing process. The treatment of tuberculous pleurisy, therefore, should consist in the treatment of its causative factor, namely, the pulmonary tuberculosis.

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[4] Jousett: Semaine méd., 1903, No. 3, p. 22.

[5] Walsham: The X-Rays in the Diagnosis of the Chest, Ref. Arch. Roentg. Ray, July, 1908.

[6] Rieder: Zur Früh-diagnose der Lungentuberculose mit Hilfe der Roentgenstrahlen, Beitr. z. Klin. d. Tuberc., xii, No. 2, 195.

[7] Krause, P.: The Value of Roentgen-Ray Examination in the Diagnosis of Pulmonary Tuberculosis, Especially in Reference to Early Tuberculosis, Am. Jour. Med. Sc., March, 1909, cxxxvii, No. 3.

[8] Holland: Diagnosis of Pulmonary Tuberculosis by Means of the X-Ray, Liverpool Med.-Chir. Jour., July, 1908.

[9] This point is further discussed in a paper which will soon be published in the Illinois Medical Journal.

[10] Späth: Beziehungen der Lungencompression zur Lungentub Würtenberg, Cor.-Bl. lviii, No. 15.

[11] Konzelmann: Ueber den Einfluss der pleuritischen Exudate auf den Verlauf der Tuberculose, Beitr. z. Klin. Tuberc., x, No. 4.

[12] Gilbert and Fede: Schmidt's Jahrb. d. in.- u. Ausländ. Med., 1907, xcv, 247.

[13] Nasetti: Ref. Deutsch. med. Wchnschr., 1908, No. 42, p. 1819.

[14] Schnutgen: Berl. klin. Wchnschr., Jan. 18, 1908, p. 97.

Returning to the principle of compression of the lung in the treatment of unilateral tuberculosis, we may state that this was inaugurated by Forlanini[15] in 1894, and independently practiced by Murphy[16] by means of injections of nitrogen gas into the pleural cavity, where the adhesions of the lung did not prevent its introduction.

In Germany this method has been tried by Brauer,[17] who published his later experiences with the method in 1906, and recently Carl Lexer[18] published four cases so treated, and the results obtained by all these authors were quite encouraging.

Another method of lung compression was tried by A. Schmidt,[19] which consisted of the injection of oil instead of nitrogen gas.

More recently a radical method has been advised by Brauer, namely, the mobilization of the entire chest wall of the affected side by extrapleural resection of the entire length of as many ribs as will permit the remaining soft structures to fall against the diseased lung and prevent its expansion. It is essential to guard against injuring or opening the pleural space during the operation.

This work has been developed and extensively described by Professors Brauer[20] and Friedrich,[21] and, while the operative procedure is connected with danger and leaves the patient with deplorable deformity, they regard it as justifiable in cases in which the lives of those otherwise doomed unfortunates can be prolonged and made more comfortable.

Professor Friedrich reports ten cases treated in this manner, with three deaths and seven recoveries. This entire series consisted of patients with extensive unilateral pulmonary tuberculosis in which climatic and medical treatment had failed to prevent the spreading of the tuberculous process.

While these various methods differ in their application, the underlying principle in all of them is the same—namely, to bring about a collapse of the diseased lung, *thereby suspending its action and putting it to rest* for such length of time as may be required for the healing process.

To determine the causes which bring about this improvement has tempted many to investigation. Karl Spengler,[22] Baumler[23] and others have pointed out that pneumothorax could, in many cases of cavernous phthisis, produce a marked improvement, and the experiments of Forlanini, Murphy, Lemke,[24] in America, as well as Tuffier[25] in France and Brauer in Germany, with production of an artificial pneumothorax have shown that the compression of the diseased lung causes collapse of abscess cavities, arresting respiratory function and furthers cicatrization, and in consequence the lymphatic circulation is retarded and the absorption of toxic material from the diseased organ reduced. This effect is clinically evident in the cases thus treated, by a reduction of fever, cessation of cough and improvement in the general condition.

I am satisfied that this principle of immobilization of the lung is correct, and am certain that in working out some method which would facilitate its application without causing the great mortality or deformity of the present methods lies a promising field in the treatment of unilateral tuberculosis.

To exploit this valuable principle of lung collapse, and to perfect its means of application, has been my aim, but my experiments in this particular field are too recent and incomplete to permit their publication, although they seem very encouraging.

TREATMENT BY INJECTIONS OF VASELIN PASTE

At this point I desire to discuss the treatment of empyema and lung abscess, which, in a measure, led to my experiments in the treatment of tuberculous pleurisy.

During the past two years my brother, Dr. Carl Beck, and I have had considerable experience in the treatment of empyema by means of injections into the cavities of a liquefied paste made of 33 per cent. bismuth subnitrate and 67 per cent. of vaselin.[26]

The subject has, in connection with the treatment of chronic sinuses and suppurative conditions of the nasal accessory sinuses,[27] aroused considerable interest in the medical profession, since its simplicity and efficiency seem to have rendered it a valuable addition to our present methods of treatment of this class of chronic suppurative diseases.

In this paper I shall omit a review of the literature on the treatment of empyema, knowing that the medical profession is familiar with the methods in vogue; I shall confine myself to the consideration of this one method of treatment, which I first introduced in 1907, and to its further development since that time.

In December, 1907, I instituted this form of treatment in the first case, an abstract of the history of which is here cited:

Case 1.—*Empyema.*—Patient, H. A., aged 19. Family and personal history free from tuberculosis. January, 1907, an attack of pleurisy with effusion, soon changed into *empyema.* March 20, 1907: Resection of two ribs, evacuation of pus, drainage. A daily discharge of 2 to 3 ounces of fetid, green pus persisted in spite of all treatment until Dec. 20, 1907, when the patient was brought to me for treatment.

Bismuth Treatment.—Drainage-tube was removed and 120 gm. of bismuth-vaselin paste were injected into the suppurating cavity in the patient's chest. Two days later the injection was repeated, most of the previously injected paste having escaped with the discharging pus.

Later History.—After four days the discharge became serous, lost its foul odor and greatly diminished in quantity. Injections were repeated daily for a few days, and on the twelfth day the sinus closed and has remained so to date; the patient has gained 30 pounds and is in perfect health. Skiagraphs had been taken at intervals of two months which demonstrated the gradual absorption of the bismuth paste and the slow expansion of the lung where the abscess had existed.

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[15] Forlanini: Deutsch. med. Wchnschr., 1906, No. 35; referring to previous work.

[16] Murphy, J. B.: Surgery of the Lung, The Journal A. M. A., 1898, xxxi, 151, 208, 281, 341.

[17] Brauer: Die Behandlung der einseitigen Lungenphthise mit künstlichem Pneumothorax, München. med. Wchnschr., 1906, No. 7.

[18] Lexer, Carl: Therapeutische Versuche mit. künstliche Pneumothorax. Beitr. z. Klin. d. Tuberc., 1907, viii, 101.

[19] Schmidt, A.: Deutsch. med. Wchnschr., 1906, No. 13.

[20] Brauer: Lungencollapse-Therapie, Beitr. z. Klin. d. Tuberc., xii, 49.

[21] Friedrich: Lungen-Chirurgie, München. med. Wchnschr., Dec. 1, 1908.

[22] Spengler, Carl: Thoracoplastic und Höhlendisinfection bei Lungenphthise, Deutsch. med. Wchnschr., 1903, xxix, 312; Zur Chirurgie des Pneumothorax, Beitr. z. klin. Chir., 1906, xlix.

[23] Baumler: Abhandlungen über tuberk. Empyema, Deutsch. med. Wchnschr., Sept. 13, 1894, p. 717.

[24] Lemke, A. F.: Discussion on his paper on Pulmonary Tuberculosis, The Journal A. M. A., 1899, xxxiii, 1085.

[25] Tuffier: Ref. by Musgrave, Inter. Med. Congress, Moscow, 1897.

[26] Beck, E. G.: Fistulous Tracts, Tuberculous Sinuses and Abscess Cavities: A New Method of Diagnosis and Treatment by Bismuth Paste, The Journal A. M. A., March 14, *1908, L, 868.*

[27] Beck, J. C.: Bismuth Paste in the Treatment of Suppuration of the Ear, Nose and Throat, The Journal A. M. A., *Jan. 9, 1909,* lii, 117.

This surprising result led me, and others also, to the further application of this simple method of treating such complicated and usually unfavorable cases, and six months later I was able to include in my report to the Sixth International Congress on Tuberculosis[28] 19 cases in which empyema and lung abscesses were treated by this method; 14 of the patients were then apparently cured, 4 improved and still under treatment, and one not improved, having discontinued treatment.

The sources of this report were quite reliable, such competent surgeons as Mayo, Ochsner, McGuire, etc., contributing to same in addition to the cases treated by myself.

Since the publication of these cases reports from many surgeons throughout this country and from abroad have convinced me that the application of the bismuth paste in the treatment of empyema surpasses even the good results obtained in treating other suppurative conditions by the bismuth paste method.

Nemanoff,[29] for instance, reports 4 cases of empyema treated in Professor Kadjan's clinic, St. Petersburg, in which one injection of the bismuth paste in each case was sufficient to produce complete closure, whereas the same patients had been treated at the clinic for six months without success. Eighty grams of the paste was the maximum dose.

Dr. A. J. Ochsner,[30] Chicago, reported to the American Surgical Association June 4, 1909, 14 cases of empyema, in all of which operation had been previously performed and the sinus failed to close, although in two of them the Estlander operation had been performed. In all these cases he applied the bismuth paste, with the result that twelve cases had completely healed and two patients are still under treatment and very much improved.

My experience and that of Dr. Carl Beck disposed of 10 cases of empyema and three cases of lung abscesses.

How many of these cases were of tuberculous origin it is difficult to say. In two of them we could positively prove the tuberculous nature, having found the bacilli in the discharge, and also proved its existence by animal inoculation.

Cases 1 to 9 inclusive were treated according to the method described in my previous publication. In the last four cases, 10 to 13 inclusive, important modifications were made, which may lead to entirely new and valuable improvement in the surgical treatment of empyema and lung abscess.

I shall briefly cite the histories of these thirteen cases, since nearly each one brings out some points, knowledge of which will be of value in the future treatment of similar cases.

Cases 2 and 3 are cited in detail elsewhere,[28] and I shall not give detailed histories of them in this paper.

CASE 2.—*Tuberculous Empyema.*—Patient was a young lawyer. Repeated withdrawals of pleuritic fluid in 1906 were followed by empyema. The same year five ribs were resected but the cavity did not collapse and discharged 100 c.c. of green pus every day.

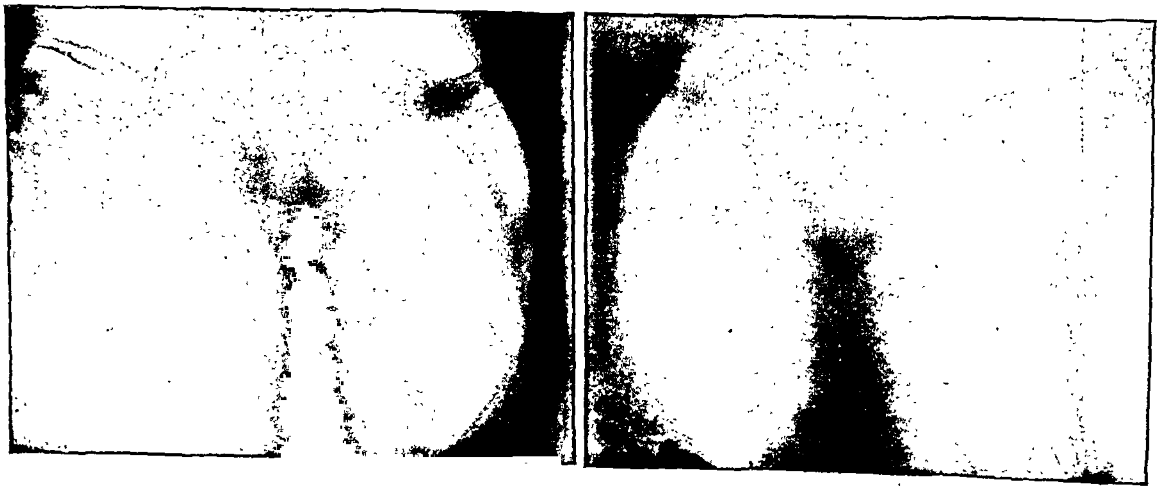
Bismuth Treatment.—In April, 1908, the cavity was injected with 720 grams of bismuth paste, which was allowed to remain six weeks. At first the patient gained in weight, but at the end of six weeks he developed symptoms of bismuth intoxication, starting with slight cyanosis, then blue borders on his gums, loss of weight one pound a day and desquamative nephritis. As soon as the cause of these symptoms were explained the cavity was immediately filled with 500 c.c. warm sterile olive oil, which formed an emulsion with the paste, and was easily withdrawn the next day by means of a suction pump.

Later History.—All symptoms of intoxication disappeared in one week and patient regained his weight at the same rate that he had lost it. The pus became seropurulent and continued to discharge in quantities of one to two ounces a day until December, 1908, when the sinus closed and remained so until March, 1909, when it reopened and a quantity of green pus escaped, which, on examination, was found to be sterile. The cavity was refilled with pure, sterile petrolatum. It closed the following day and has remained closed to date. The final result of this case is not as yet decided, although the patient considers himself perfectly well and has chosen the occupation of chauffeur.

CASE 3.—*Lung Abscess.*—The report of this case, which is similar to Case 2, is given in full in the Transactions of the Sixth International Congress on Tuberculosis.

Both Cases 2 and 3 proved to be of tuberculous origin and in both the bacteriologic studies of the secretions, as well as tests by animal inoculation, proved that within the first six weeks of treatment with bismuth

Fig. 1.—Stereoscopic view of active tuberculosis with cavity formation.
The stereoscopic views are placed at the margin to facilitate the use of the stereoscope.



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[28] Beck, E. G.: Tr. Sixth Internat. Cong. on Tuberculosis, 1908.
[29] Nemanoff: The Treatment of Fistula and Drainage Passages, Russk. Vrach, vii, 1568.
[30] Ann. Surgery, July, 1909, p. 151.

paste the tubercle bacilli, as well as other micro-organisms, gradually diminished and finally disappeared. Ten c.c. of the secretions injected into the peritoneum of a guinea-pig did not produce tuberculosis or septic infection, while previous to the bismuth treatment one drop of the pus of each of these cases injected into guinea-pigs produced a tuberculosis within four weeks.

Case 4.—*Empyema.*—Chas. L., aged 18, had the grip in March, 1908; two weeks later developed pleurisy with effusion. Temperature 105. Aspiration was not performed until four weeks later, when resection of a rib was done and 2,000 c.c. of pus evacuated and drainage established. For three and a half months the pus continued to discharge profusely. July 20 30 gm. of bismuth paste were injected, whereupon the secretion ceased within twenty-four hours and sinus closed five days later. Patient gradually regained his health and sinus has not reopened.

Case 5.—*Empyema.*—M. O., aged 48, electrician, in 1906 developed an empyema, which, after resection of two ribs and drainage, failed to close. A radical operation was performed sixteen months later by resection of three more ribs, but even this was in vain, and bismuth injections were tried by his physician, and as these also were ineffective, the latter referred the patient to me for treatment. I saw him first on Aug. 2, 1908, with a sinus beneath the right scapula leading into a large cavity from which a seropurulent discharge of a sour, fetid odor escaped, causing severe eczema around the mouth of the sinus. After ten injections of the bismuth paste at intervals of three days the condition was no better. I then tried an injection of the paste to which 2 per cent. formalin had been added. This caused severe pain and the condition seemed aggravated. Patient discontinued treatment and came under the care of another physician, who recently reported to me that another radical operation had since been performed with the object of producing lung collapse, but patient did not rally and died shortly after the operation.

Case 6.—*Empyema.*—Mary H., 8 years old, had at the age of 6, developed empyema which, after several months of expectant medical treatment, ruptured spontaneously in two regions on the anterior left chest wall, leaving three sinuses discharging green, thick pus. Child was very much emaciated when brought to me in May, 1908; fever varied from 101 to 102 daily. Patient coughed and had shortness in respiration (20 to 42). There was dulness on the entire left chest, radiograph showing distinctly that side filled with fluid. Instead of the usual resection of ribs and drainage, I injected 60 grams of the bismuth paste through one of the sinuses. Temperature and cough persisted in a milder form for a period of three weeks; thereafter all symptoms disappeared and all three sinuses closed. While I could ascertain the presence of fluid in the pleura three months later the child had, nevertheless, gained 20 pounds in weight and is at present in perfect health, the fluid having been in the meantime entirely absorbed.

Bacteriologic examination of pus, carried out systematically, proved that the pus discharge became sterile twenty days after first injection.

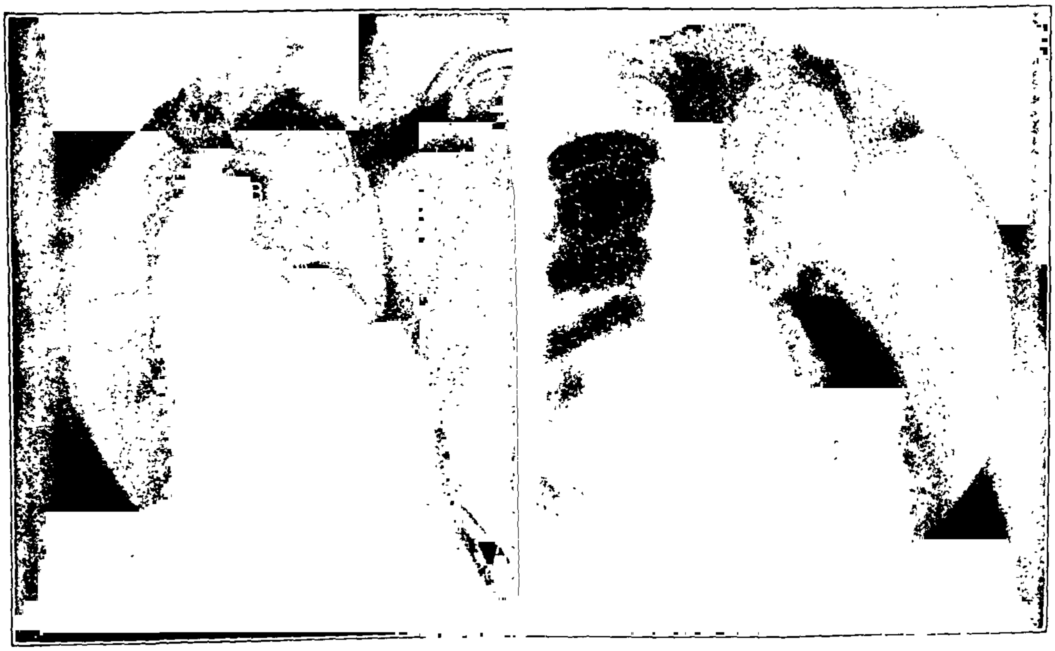
Case 7.—*Empyema.*—Miriam D., aged 5½ years, a delicate child, was taken sick at the age of 3 with acute lobar pneumonia. Empyema followed, and after the withdrawal of some of the fluid a resection of two ribs was performed by a surgeon in Ohio. In spite of perfect drainage and careful medical treatment the empyema continued discharging pus for one and one-half years, child failing gradually in health. As a last resort an Estlander operation was advised by the physician in charge, which the parents refused. In October, 1908, the child was brought to me for treatment. Her temperature varied from 99 to 101. Extreme emaciation and cough with pain as well as retraction of chest wall, were the principal symptoms. The small contracted opening into the chest secreted about 30 gm. of creamy pus daily. Through this sinus I injected 30 gm. of bismuth paste and took a radiograph, which showed that the cavity contained a large quantity of pus and the paste merely floated therein. Without resorting to further injections I observed the case for two weeks and noted a gradual decrease in the fever and cough, cessation of the discharge and closure of the sinus on tenth day. The child gained four pounds during the two weeks and the latest reports indicate that she has regained perfect health. (This patient was presented at the session of the American Medical Association, Atlantic City, June, 1909.)

The lesson learned from Cases 6 and 7 is the following:

1. It was not necessary to evacuate or drain off the pus from the pleural cavity before injecting the bismuth paste, and small quantities (30 to 60 gm.) were sufficient to produce the desired results.

2. Although the purulent exudate was not absorbed for several weeks after the bismuth injections had been

Fig. 2.—Stereoscopic view of sinus from empyema of twenty-eight years' standing, filled with bismuth paste (Case 9) closed in sixty days after first injection. A indicates rubber drain; B, arch of aorta.



made, its presence caused no elevation of temperature and sinuses closed in a comparatively short time.

3. While the discharge retained its purulent character after the bismuth injections, it was nevertheless found to be sterile.

Through the courtesy of Dr. W. C. Kirchner, surgeon-in-charge of the St. Louis City Hospital, who placed at my disposal a number of patients for demonstration of the bismuth paste treatment of sinuses before the members of the St. Louis Surgical Society, I injected, among other cases, one of empyema which I desire to include in this series. Dr. Kirchner's history of the case follows:

CASE 8.—*Empyema.*—Boy, aged 8, entered City Hospital, March 19, 1909, with a tentative diagnosis of appendicitis. Pulse, 140; respiration, 44; temperature, 101.6. After a few days of observation diagnosis of bronchopneumonia with pneumothorax was made.

Bismuth Treatment.—Temperature became normal three days after operation; discharge diminished but was very offensive under daily dressing until April 25, when patient was taken to clinic and 120 gm. of 33 per cent. bismuth paste, Formula 1, were injected into the pleura by Dr. E. Beck of Chicago. A second injection was given April 30 and on May 25 sinus was entirely closed and patient apparently cured.

Smear preparation of pus and the sputum were negative as to tubercle bacilli.

CASE 9.—*Empyema.*—G. T., aged 39, engineer, family history negative, had measles at the age of 15; no other disease. In 1881 he suffered from an attack of pneumonia, followed by accumulation of pus in the left pleura. Drainage was established by intercostal incision (Dr. Favill, Sr., Madison, Wis.) and rubber tubing inserted. The purulent discharge had persisted since 1881 and with only a few days intermission, a drainage tube had to be kept in the discharging sinus. Various methods, except radical operation, were tried in attempts to close the sinus, but all failed. In January, 1909, the patient was referred to me by Dr. H. B. Favill for treatment. His general health was very good, temperature and pulse normal, right lung normal, left lung and chest cavity very much retracted. Pus discharge of thick and of dark green color, contained staphylococci and a few streptococci.

Bismuth Treatment.—Injection of bismuth paste, Formula 1, 60 gm., filled out the entire contracted pleural sac. Temperature remained normal and discharge became serious on fifth day. Injections were repeated every third or fourth day, and after sixty days the sinus closed and patient returned to Arizona to resume his work.

This case is very instructive, since it teaches that even after twenty-eight years' constant suppuration an empyema may be obliterated by injection of the paste. The stereoradiograph (Fig. 2) of this case demonstrates distinctly in plastic effect the size and contour of the remaining pouch and likewise illustrates the efforts of Nature in her attempt to obliterate this cavity during the twenty-eight years. The ribs were so retracted that the intercostal spaces disappeared, the spinal column curved with its convexity to the well side, clavicle drawn down and diaphragm drawn up, all structures contracting toward one center, the old suppurating cavity.

The following case illustrates a new method of treatment of lung abscess, and for that reason I will give a more detailed history.

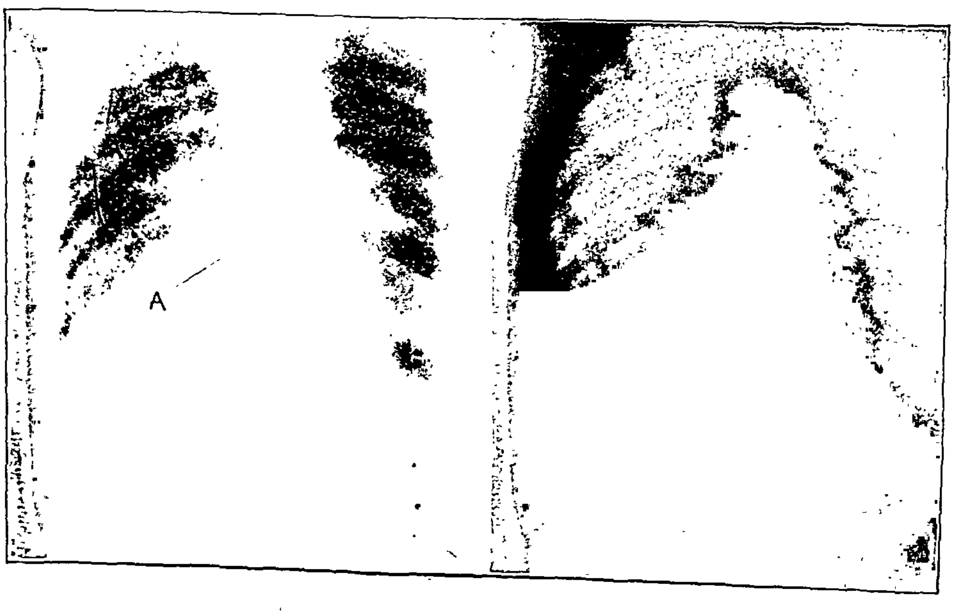
CASE 10.—*Abscess of Lung.*—Ellsworth D., aged 15, family history negative as to tuberculosis, was well until four years before examination, when he inhaled a brass pin-tack, the size of a lentil. Within a week he developed pneumonia. While the acute symptoms passed, he continued to expectorate pus and had a daily elevation of temperature from one-half to 3 degrees. In spite of all medical and climatic treatment, the above symptoms persisted for four years.

Examiantion.—I first saw him Dec. 15, 1908. His weight was 98 pounds, temperature 97, pulse 120, cyanotic and greatly distressed. The entire chest was resonant, except the right posterior and lower part, the dulness extending upward to the angle of the scapula. Stereoradiographs were taken (Fig. 3), which were of great assistance in the anatomic diagnosis, since they brought out, in plastic effect, the location of the abscess and its relation to the other structures, and show the foreign body. The expectoration had a fetid odor, was green in color, and at each coughing spell at least half an ounce of pus was expelled. The microscopic examination of the pus revealed the presence of streptococci, pneumococci and staphylococci. Cultures produced an abundant growth of streptococci.

An operation was decided on and a modified method of treating abscess of lung employed in this case as stated above.

Operation and Bismuth Treatment.—With the usual preliminary preparation for rib resection, the patient was chloroformed and under the guidance of the stereoradiograph an incision 10 cm. in length was made, directly over the region of the abscess, i. e., about 5 cm. below the angle of the scapula. Resection of 4 cm. each of seventh and eighth rib was made without opening the pleural cavity. Two catgut stitches were inserted by means of a curved needle, fastening the visceral pleura to the chest wall. Packing sterile gauze against the exposed parietal pleura, temporary sutures in the skin were inserted and the patient put to bed. On the third day another short chloroform anesthetic was given, the gauze packing removed, an incision of one inch made in the pleura, and, with the index finger the lung tissue was bored through until the

Fig. 3.—Stereoscopic view of lung abscess, treated by prophylactic bismuth paste method, closed in ten days. A' indicates abscess before operation



resistance indicated that the abscess wall had been reached. A pair of blunt, curved artery forceps were passed along the index-finger, pushed into the abscess and the cavity widely spread apart. About 100 gm. of a very offensive pus escaped. The hemorrhage was very slight. Five strips of gauze 2 inches in width were packed into the cavity, the ends of same being tied on the outside with a silk ligature. Patient's temperature, cyanosis and cough still continued. The following day the five strips of gauze were removed and the cavity injected with 100 gm. of 33 per cent. bismuth-vaselin paste. This produced a coughing spell, the patient expectorating a great deal of pus, mixed with the paste. No drainage-tube was inserted into the pleural opening. The injections were repeated daily for one week, and each time the patient emptied the contents of the abscess by coughing out some pus mixed with the yellow paste. At the end of ten days the external wound was entirely closed, symptoms of cough, fever and cyanosis disappeared.

Later History.—Four days after operation patient was sufficiently well to permit of my presenting him before the North Side Branch of the Chicago Medical Society and later at the Milwaukee Medical Society. His general condition now is excellent, his weight having increased from 98 to 124 pounds, and temperature has remained normal since one week subsequent to the operation.

It is not advisable to inject the paste while the patient is under anesthetic, since the pus may be drawn into the trachea and cause aspiration into the other lung.

While I have had opportunity to carry out this method of treating lung abscess in this one case only, the result is so striking and theoretically so plausible that I do not hesitate to recommend this procedure, in suitable cases, to anyone who is familiar with surgery of the chest.

Case 11.—*Empyema.*—Harold B., aged 8. Family history negative. Measles at 2 years of age. March 28, 1909, present illness began with high fever; diagnosis, lobar pneumonia. Patient not recovering as expected, physician brought him to the hospital April 9.

Physical examination revealed dulness over the entire right chest; left normal; radiograph (Fig. 4) corroborated physical findings. Temperature 100, pulse 120, respiration 32, marked cyanosis and emaciation were the cardinal symptoms.

Operation and Bismuth Treatment.—Operation April 11 by Dr. Carl Beck, consisting of the resection of one inch of the seventh rib. Rubber drain inserted after 350 c.c. of pus escaped. Pus continued to discharge and on the fourth day the rubber drain was removed and 100 grams of a 5 per cent. bismuth-vaselin paste (bismuth subnitrate 5 per cent., vaselin 95 per cent.) were injected into the cavity and a plain sterile gauze dressing applied. On the following day temperature became normal and all previous symptoms were ameliorated. Injection was repeated and six days later the secretion ceased. Sinus closed on the eleventh day after operation and has remained so to date.

Bacteriologic findings before bismuth injection had, as usual, been made, the smear preparation showing an abundance of staphylococci, and, in the culture media, a growth of staphylococci and Friedlander bacillus. Following the first injection a slow growth could be produced. After the second injection we could not produce any growth at all.

Case 12.—*Empyema.*—M., 2 years old, had a severe attack of pneumonia April 16, 1909, starting with a temperature of 105.8, pulse 136, respiration 48, which, after ten days developed into an empyema of the entire left chest. Resection of one rib by Dr. Carl Beck with introduction of drainage-tube produced only moderate relief. Temperature still ranged from 100 to 102 and respiration from 38 to 48 during the entire week following the operation.

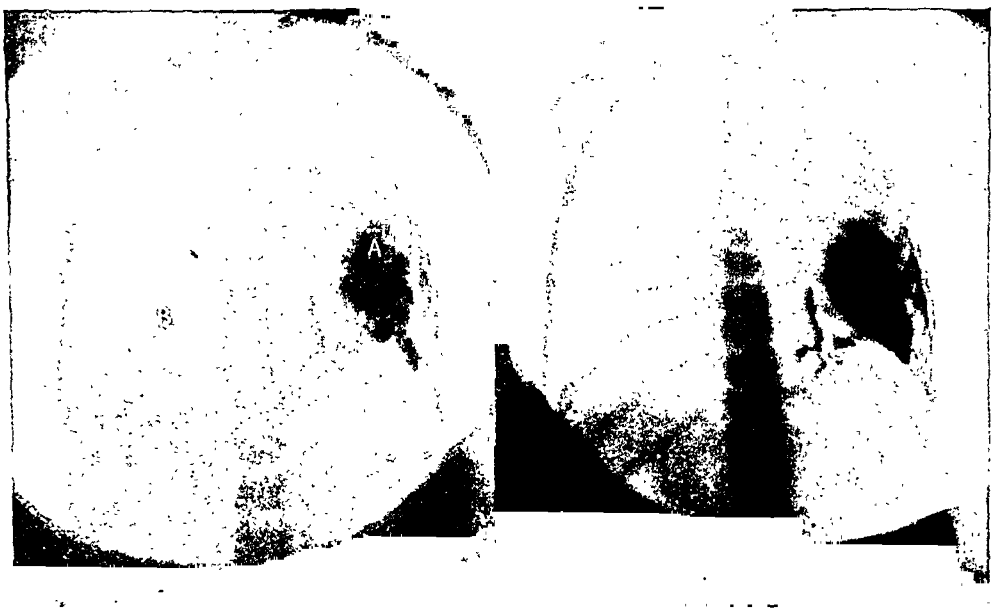
Bismuth Treatment.—On the eighth day after operation (May 3, 1909), an injection of 120 c.c. of a 5 per cent. bismuth-vaselin paste was made, and two days later the same quantity reinjected. Temperature fell to 99.4 (rectal), respiration to 30 within four days, and subsequently became normal, respiration 30. The pus became sterile after the first bismuth injection, but staphylococci reappeared a week later, and for this reason the opening has not been allowed to close. The injections will be continued until the secretion becomes sterile and then the closure of sinus permitted.

The general condition has markedly improved, cough disappeared, no signs of bismuth absorption present.

In the treatment of Cases 11 and 12 we deviated from the usual procedure in such cases in that the drainage tube was removed as early as the fourth day after operation and the cavities filled with a 5 per cent. bismuth paste instead of waiting several weeks for Nature to close it.

While the clinical results in these two cases are satisfactory and that complications need not be anticipated, nevertheless I do not, as yet, advocate this method as a routine procedure until a larger series of cases has proven its advantage over the present methods.

Fig. 4.—Stereoscopic view of empyema filled with bismuth paste four days after operation; healed in two weeks. A indicates 5 per cent. bismuth paste; B, heart dulness.



At any rate, anyone wishing to try this innovation should do so under careful guidance of daily microscopic examination of the secreted pus, and as long as the pus contains micro-organisms the opening should not be allowed to close.

Case 13.—*Empyema.*—G. E., aged 26, with negative history of tuberculosis, was attacked with a severe type of pneumonia March, 1909. Severe cough, high temperature, lasted for ten days, and instead of usual crisis the patient continued to have fever, from 100 to 103 daily.

Shortness of breath increased and he lost considerably in weight. In this condition, with a temperature of 103, rapid pulse and labored breathing, he came to the city May 15, 1909, and applied to Dr. Wynekoop for treatment, who called me in consultation. Diagnosis of empyema, based on all typical symptoms, was soon reached, and, moreover, corroborated by a stereoradiograph and thoracentesis, whereon an operation was proposed.

Operation and Bismuth Treatment.—On my suggestion the following procedure was employed in this case: May 16, 1909, under anesthetic, a resection of one rib was made and two quarts of thick, greenish, yellow pus were evacuated. Instead of inserting a rubber tube, a quantity of 250 c.c. of 5 per cent. bismuth vaselin paste was at once injected and a plain sterile gauze dressing placed against the incision.

Later History.—Temperature, pulse and respiration became normal within twenty-four hours after operation and remained so to date (May 27). Patient is gaining in weight and strength, eats with great relish and has no difficulty in breathing. The purulent secretion changed into a seropurulent within twenty-four hours, and at the end of the first week only a small quantity of sterile serous discharge escaped into the dressing. At present (two weeks after operation) only a little vaselin escapes from the contracted small opening.

The procedure employed in this case would certainly be an ideal method if we were certain to obtain in every case the same favorable result. One case, however, no matter how brilliant the result may be, is not conclusive, and here, as in Cases 11 and 12, we must produce a large series of similar results before we can safely advocate this procedure as a routine method in treating empyema.

In reviewing the histories of these thirteen cases one can follow the step-like development and the gradual approach to what we aim to make a satisfactory method of treating empyema; a method which would do away with the rubber drain, the everlasting daily dressing, the continued suppuration which causes the pleura to become so much thickened that the expansion of the lung is practically impossible; a method which would cast into eternal oblivion the necessity for such radical, deforming and dangerous operation as the resection of the chest wall.

The factors contributing to the efficacy of this method of treatment of chronic suppurative diseases have been studied by me and published in the "Transactions of the Sixth International Congress on Tuberculosis" and my conclusions since that time have not changed materially.

Further investigations in the pathology and reparative processes are being carried on by my brother, Dr. Carl Beck, and will be published in due time.

CAUSES EFFECTING HEALING PROCESS

1. Bismuth-vaselin paste (proportion one part bismuth and two parts vaselin), when injected into suppurative cavities or sinuses, produces chemotaxis. In other words, it attracts the leucocytes to the parts injected, where the phagocytic action destroys the bacteria present in the walls and channels of the sinuses. A systematic examination of the secretions by smear and preparation, cultures, and frequently by animal inoculation before and after the injections of the paste, have proved to me the bactericidal action of the bismuth subnitrate when brought in contact with living tissues. Tubercle bacilli are no exception, this fact having been discovered in Case 2 and corroborated in Case 3. They are rarely found in the pus from tuberculous sinuses; more often, however, in tuberculous empyema. They lodge in the granulations and walls of abscess cavities. The bismuth paste, coming in contact with the walls containing the bacilli, induces chemotaxis, and the leucocytes thus drawn to the injected region destroy the micro-organisms present. This, to a certain degree, explains the interesting microscopic findings of the morphologic changes and destruction of the bacilli.

2. The chemical action of the bismuth subnitrate in the destruction of the micro-organisms seems to be very slight, as shown by experiments on cultures *in vitro*.

3. Distention of the abscess cavities with the paste and pressure can play only a subordinate part in the therapeutic effect. In some of these empyemas (Cases 6 and 7) only a small quantity was injected into a large cavity containing quantities of pus, and the results were all that could be desired.

4. The exposure of the injected parts to the *x*-ray can, likewise, play only a secondary part in the healing process, as I have received reports from many surgeons who obtained satisfactory results without the use of the *x*-ray. I believe, however, that in tuberculous sinuses from joint disease the application of the *x*-ray often accelerates the healing.

TECHNIC IN CHEST CASES

The technic of bismuth injections employed in abscess cavities in the chest differs somewhat from the one applied in sinuses. In the chest we have to deal with an infected cavity which has a rigid chest wall on one side, and the retracted, but more or less resilient, lung on the other. It is generally believed that if the air could be prevented from rushing into the cavity with each inspiration the lung would expand and fill up the space, but this does not explain why in many cases the abscesses do not heal when this principle is carried out by the suction-pump of Perthes,[31] and in recent tuberculous cases it is not even desirable.

After a radiograph of the cavity has been taken and an examination of the secretion has been made, it is injected with 100 gm. of bismuth paste, Formula 1. Gauze dressings are applied daily until sinus closes. Should temperature rise above 101 F., or the patient complain of severe pressure, the accumulated fluid should be drained off and the opening again allowed to close. If the temperature remains normal and no unpleasant symptoms arise the 100 gm. of paste injected may be left in for absorption, provided no signs of bismuth intoxication arise. Repetition of the injection is necessary only when the bismuth paste has discharged with the pus, and micro-organisms are still found in the secretions. In my early experience I supposed that the cavity had to be overdistended with the paste in order to produce healing, and I introduced as much as the cavity would hold. Such large quantities are not only unnecessary but are also liable to produce bismuth intoxication. Should any signs of this poisoning appear the bismuth must at once be dissolved by warm olive-oil and withdrawn by suction-pump.

It is noteworthy that the tuberculous empyema is far more resistant to any form of treatment than that of pneumococcus or other varieties. Murphy states that a very large percentage of empyema in adults is of the tuberculous form and that these rarely undergo absorption or break into a bronchus.

From personal communication with Dr. Moore, medical superintendent of the Dunning Hospital for Consumptives, an institution which takes care of an average of 400 patients in the progressive stages, I have the information that in the past four years he observed, in 5,000 cases treated, 25 cases of tuberculous empyema, and, whether operated on or not, all of the patients succumbed to the original disease.

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[31] Perthes: Mitt. a. d. Grenzgeb. d. Med. u. Chir., vii, Heft 4, 5.

These tuberculous empyemas are usually preceded by the serofibrinous pleurisy, which, either by frequent tapping or spontaneously, become secondarily infected. Operation is usually resorted to and, as a rule, the subsequent treatment is very tedious and unsatisfactory.

In my series of cases two were proved to be of tuberculous variety, and, while I do not consider the patients perfectly cured, they have so much improved as to permit the resumption of their pursuits in life, one of them having conducted his own campaign for state's attorney and won in the battle, the other taking a position as chauffeur.

Empyemas in children, or those following acute inflammatory condition in adults, give a very much brighter outlook for recovery. In children the drainage is usually rapidly followed by expansion of the lung and spontaneous closure of the sinus, and the majority of cases of the non-tuberculous type in adults will yield to the accepted methods of surgical treatment. A small percentage of cases, however, even of these types, will resist all medical and surgical treatment, and the sinuses keep on discharging pus indefinitely.

The failures are thus explained:

1. As long as the walls lining the pleural cavity are the seat of living micro-organisms, especially tubercle bacilli, an obliteration of the space can not be expected.
2. After suppuration has existed for years and the pleura has become very thick and the lung cicatrized, the expansion of the lung will not be possible.

The requirements therefore are:

A cavity free from micro-organisms and the lung still sufficiently resilient for expansion.

The method here described and employed in the cases enumerated, I believe, possesses to a marked degree the means essential to obliteration of abscess cavities. The introduction of bismuth paste has, as a rule, produced, by a process of local leucocytosis, a sterilization of the secretion, and in most cases softened the indurated pleura sufficiently to allow moderate expansion of the lung and obliteration of the space.

I realize that a series of thirteen cases is too small and the time since the application of this new method too short to admit of formulating fast rules. My aim in thus prematurely bringing the subject before the profession, is to stimulate others to help in working out an ideal method of treating lung abscesses and empyema.

92 State Street.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. POWERS, BECK, FRIEDRICH, MEYER, AND GREEN AND JANEWAY—A SYMPOSIUM ON THORACIC SURGERY *

Dr. DeForest Willard, Philadelphia: We all know the difficulties of thoracic surgery. We have invaded the abdomen and cranial cavity with comparative impunity and safety. Why? Because the cranial and abdominal cavities contain organs which are not essential to immediate life; but in the thorax are located the lungs and heart, without which no person can live more than a few moments, while the abdominal organs can be incapacitated for work for a long period of time. Therefore, we have approached this region with fear and trepidation. Since the invention of cabinets for positive and negative pressure, and for producing differential pressure, the thorax has become a more hopeful field for the surgeon, and we may yet hope in due time to meet the difficulties now before us with better preparation than heretofore, especially in cases of sudden pneumothorax, which have always been a *bête noir* in surgery. To treat a diseased lung is not so difficult, because it is crippled already, and it is not nearly so dangerous as is an acute pneumothorax. For many years I have been much interested in chest surgery. It has been my hope that we might be able to treat a tuberculous cavity in the lung by opening and drainage. The experiments I performed twenty years ago on dogs and experience since that time on human beings, has convinced me that if there were a single apex cavity it would be a feasible and successful operation, but, unfortunately, in tuberculosis of the lung, there is not, as a rule, a single cavity, but many cavities scattered throughout the lung, and while we could open and drain one, others would remain. In the experiments I performed many years ago, I found great difficulty in preventing leakage from the bronchial tube into the pleural cavity. If I closed the external opening through the walls, speedy death would be the result from this constant leakage of air. The method described by Meyer of crushing the bronchus will certainly be an advantage in preventing such an accident, especially when the bronchus is ligated and sutured afterward. In extirpation and pneumectomy, I am sure that the methods he described will be perfectly possible by means of differential pressure. The size of the opening in the chest wall is also a factor in determining the occurrence of pneumothorax. If we can establish tolerance by means of partial closure, we have gained much. In regard to mediastinal work, the transverse opening employed by Friedrich is by far the most advantageous, and is much better than the vertical incision. Judging from the benefits I have derived in surgery from the use of bismuth paste, in empyema, I feel satisfied that its influence on the diseased pleura will be useful. I am much pleased with Dr. Meyer's aëronautic invention, and we may hope that by means of this and the aëroplane, surgeons will in the future be able to take their patients up into the air a few thousand feet and operate, free from the dirt and dust of the street.

Dr. S. J. Meltzer, New York: The statement frequently made by the followers of the Brauer method, that there is no functional difference between this method and that of Sauerbruch, physiologically, is incorrect. While under the Sauerbruch method the expiration does not differ from that which takes place under normal conditions, the expiration under the Brauer method, that is, the removal of the carbon dioxid, has to take place against the atmospheric pressure plus a pressure of 8 or 10 millimeters of mercury. That is the reason why in operations under overpressure the blood often looks dark.

The slowing of the heart which occurs under distention of the lungs leads to actual stoppage of the heart. This is either a reflex act or is due to a stimulation of the vagus centers in the medulla, by the carbon dioxid. At any rate, it is important to know that the grave situation can be easily relieved by an intravenous injection of atropin. I wish also to refer briefly to a physiologic observation we made in the laboratory at the Rockefeller Institute which promises, we believe, to be of considerable practical importance. We found that under a certain method of insufflation of air, the animal does not require any respiratory movements of its own to maintain its life. In under-pressure or over-pressure, the methods are employed, it is assumed, only to prevent the collapse of the lungs while the respiration is carried on by the animal itself. This assumption, we found, is well founded. If curare is given to an animal breathing under the Brauer method, the animal dies in a few minutes. By our method the animal may be completely curarised and will continue to live for many hours. The method consists in introducing a tube into the trachea as far down as the bifurcation and conducting a continuous stream of air under a pressure of from 10 to 15 millimeters of mercury through this tube. The removal of the air carrying the carbon dioxid takes place through the space between the tube and tracheal wall driven by this pressure instead of against it.

Dr. G. E. Fell, *Buffalo, N. Y.*: It is natural from the work I did a score of years past that I should be greatly interested in this subject. My apparatus with which I have resuscitated many human beings, who have stopped breathing, is exceedingly simple after it has been studied. With it one may keep up respiration by rhythmically pressing on the piston of the air-valve, making the intervals as long or as short as is desired. In the final closure of the chest cavity, the entire pleural space of the thorax is filled with the lungs by pressing down, the piston keeping up a continuous inflation within reason, holding it as long as desired; the chest cavity is closed air tight, and autorespiration should ensue, all other matters being satisfactory. I believe that positive pressure is the best when properly applied. It is unquestionably too valuable to be pushed aside, and will be utilized on account of its portability much more than the cabinet method. In thoracic surgery, it will permit absolute control of the lung movements, or of inspiration or expiration, the latter being really passive. This was practically proved by the work I did in 1887-1888, and the following decade, the real discovery of practical forced, instrumental respiration on man. The method of using the anesthetic and oxygen with this apparatus is practical and the quantity can be gauged to a nicety. No other apparatus I have heard of compares with it in this respect, and in every other application it has proved its actual value as a means of respiring for human beings. If, as has been done in my experience, we can breathe for a human being for three or four days and nights, and save life, we should be enabled to keep up respiration for surgical purposes at the most when only an hour or so would be required. My demonstrations of its value have been varied, and it has been described here and there in my writings, although then it was not so complete as now. Notwithstanding this, it has not been fully understood by those who have discredited it.

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* The papers of Drs. Friedrich, Meyer, and Janeway and Green appeared in The Journal last week.

DR. SAMUEL ROBINSON, Boston: At the end of two and a half years of experimental surgery, it has been my good fortune within the last three months to visit Marburg, Germany, and I would express my thanks to Professor Friedrich for his courtesy in allowing me to work with Professor Sauerbruch in his clinic. During the last three years I have performed animal operations under positive and negative pressure. I have operated on human beings with positive pressure and have witnessed operations on human beings under negative pressure. I think that I have seen most of the apparatus in this country and in Germany, which are indeed many. The question in the minds of many surgeons to-day is: "Shall I employ pressure difference in my operations on the thorax or not?" Nothing would be more contributory to the solution of the problem than to have a number of surgeons operate on all individuals who present themselves with thoracic disturbances without pressure difference. If any man is convinced that pressure difference is unnecessary and will operate on every one with the same courage with which surgeons are now operating under pressure difference, his results will be the greatest contribution to this branch of surgery. Knowing the accidents that may happen, I personally am not ready to take such risks. To those who have concluded that pressure difference should at least be available in thoracic operations, the question that arises is: Is positive or negative pressure to be preferred? I urge you not to lose unnecessary time in this choice of methods. German physiologists have shown that the negative pressure method is the better imitation of the normal respiration. On the other hand, it has been proved that the results under positive and negative pressure of like value, and the choice of apparatus depends on which is best adapted for your facilities. Many apparatus are portable and best adapted for certain surgeons; other more cumbersome ones are best for hospital use. Our indebtedness to Dr. Meyer for the cabinet which he has constructed has not, I think, been sufficiently emphasized, for although he cannot expect us all to have an apparatus which combines the two methods, he has nevertheless an opportunity to determine whether or not one or the other method is applicable to a certain class of thoracic cases. Kuttner has operated alternately with both methods, but having started an operation with one he cannot change to the other, a possibility which is beautifully carried out in Dr. Meyer's apparatus. A word about empyema. It is safe to say that for the present we shall not all adopt the methods of Dr. Beck or Dr. Murphy, although their results are promising and may eventually become the methods of choice. Until that time arrives, I would emphasize the fact that most of the cases suitable for bismuth injection or thoracoplastic operation result from the neglect of the surgeon who has operated in the first stage, and I urge surgeons to see to it that the lung is brought to the chest wall in the after-treatment of empyema or in accidental pleural injuries. If this is accomplished, this discussion of the proper method of treating old empyema sinuses will no longer be a question for us to consider.

DR. N. W. GREEN, New York: Dr. Meyer's paper was especially interesting, where he showed the method of resection of the lung and of dealing with the bronchi. Of course, the closure of the bronchus is the important step in resecting the lung, and Dr. Meyer combats infection from this source, by his angiotribe method. We also have used a similar method, cutting the bronchus with the cautery after pinching it and ligating the four blood-vessels at the hilus of the lung over it. The entire lung can be taken out with ease. We must realize that there is a large field for operative work in the chest, when we consider that the pathologic conditions in the chest are so numerous, and that tuberculous processes in the lung lie dormant for many years. Dr. Willard mentioned that the cavities in the lung may be numerous or multiple. In the ordinary thoracotomy under differential pressure we can open the chest with impunity; we can explore the lung surface, and, in many cases, we can tell whether there is only one diseased spot or many, and be prepared to apply the correct treatment without causing any injury. Dr. Meltzer mentioned the use of atropin. Last year Dr. Schäfer of Edinburgh, Scotland, referred to its use in prevention of shock, and we have found it useful for that purpose in our operative work. A small dose of atropin, from 1/100 to 1/50 of a grain, may be administered a few minutes before beginning the anesthesia. Dr. Fell spoke of over-expansion of the lung. There is not so much danger of this in his work. One can raise the pressure to 60 millimeters while the chest wall is intact, without causing rupture of the lung, but it is a different matter when the lung is outside of the chest cavity. In that case we may do injury. I wish to commend to you the idea of thoracotomy under differential pressure for exploration, either for esophagus involvement or for pulmonary involvement of one form or another. I think that the procedure will probably come into more universal use even as exploratory operations are performed for abdominal disease, after all other means of diagnosis have been employed.

DR. J. B. MURPHY, Chicago: In empyema that does not communicate with a bronchus and that does not communicate by an external sinus with the body surface, what shall we do? Render that cavity sterile without opening it, and permit absorption of the sterile fluid to take place. This can be accomplished first, by simple aspiration and its change in the circulation in the wall of the abscess; second, by the injection into the abscess of some enzyme or irritant that causes polymorphonuclear leucocytosis in the cavity. Pleuritic effusions are not absorbed like many of the acute pus accumulations in other parts of the body that have ceased to destroy, because they have in them no material that converts the albuminoid into absorbable peptones. We can overcome that by injection of sterile trypsin, or better and more easily, by injecting into the pleural cavity a few drams or ounces of a 2 per cent. solution of formalin in glycerin. Eleven years ago, at Denver, I discussed the treatment of pleurisy with effusion in tuberculosis. Professor Friedrich has given us an operation which will enable us to accomplish exactly what Nature does, namely, pulmonary compression for repair of the tuberculous lesion, which we have heretofore tried to prevent by early aspiration of the fluid. He has shown that by excising a portion of the chest wall the lung is permitted to contract or to be compressed during the process of repair; a procedure which is in accordance with our knowledge of the repair of tuberculosis in any part of the body. I showed at the Denver Session that the fluid effusion compresses the lung and favors the processes of repair, and that the nitrogen or air could be used as a substitute for the fluid. When the tuberculous focus is about to penetrate the surface of the lung through the pleura, Nature produces in the pleura an effusion, and that effusion gradually compresses that lung up to one corner and holds it there while the process of repair is going on, and finally removes this by absorption. That effusion is of advantage during the process of repair if the effusion is sterile. When it becomes an empyema, when it becomes septic, then we have in addition the destructive effects of the infection; we have increased temperature and sepsis, which is very detrimental to the patient's general condition and to the process of repair; therefore it must be rendered sterile by aspiration and repeated injections of formalin solution until pus ceases to form. To other operations for removal of lung many years ago, I added experiments to show how the bronchus could be closed, and how a portion of the lung could be excised successfully. This last can be accomplished when a whole lobe is to be removed by dislocating it to the surface and allowing it to adhere and slough off. Furthermore, drainage of a circumscribed cavity of a tuberculous lung by external drainage has to be taken into account in another element—the repair of the tuberculous process after it has been drained is always slow and frequently fails of completion. If I were to lay down a law in the management of empyema, it would be this: No case of pus in the pleural cavity, not connecting with a bronchus, should ever be opened or drained until the surgeon has figured out how he is going to close or obliterate that cavity. It is easy to open the chest wall in empyema, and often impossible to close it.

Dr. Beck has brought into this field, as it appears now, a most valuable aid in the closure of these sinuses. I regret that I have not had any experience in this method. The element of pneumothorax in connection with the surgery of the lung, *per se*, is a very minor one, and positive or negative pressure apparatus will have little value in the surgery of the lung and pleura. It will have a place in the surgery of the esophagus, and in surgery where one has to remove a tumor from the mediastinum, as shown by Professor Friedrich, where one may perhaps open the pleura on both sides. Notwithstanding the air admission on one side, if the mediastinum be immobilized so that it does not vibrate during the operation, one lung can be completely compressed and the surgeon can work with that lung compressed or drawn out of the chest cavity without any inconvenience as respiratory exchange goes on in the other lung. With the mediastinum vibrating there is no respiratory exchange.

Dr. P. C. Hartford, East Palestine, Ohio: Knowing that an actual demonstration would be better than to read a paper, I have the pleasure of showing you a case of empyema cured by Dr. Beck's method of injecting bismuth paste. The little girl was operated on four years ago for empyema. The first operation proved a failure, a sinus remaining. The second operation, performed two years later, was also a failure. I saw the little girl for the first time last October, when she had a large sinus in her side. The first operation was a partial resection of the rib, with drainage four months after the pneumonia had occurred. The second operation was done to heal the old sinus. One injection of the bismuth paste entirely healed the cavity. The little girl has had no rise of temperature and no difficulty whatever since the first injection.

Dr. A. J. Ochsner, Chicago: I consider the use of bismuth paste in the treatment of sinuses and abscesses following operations for empyema as one of the most valuable contributions to surgery during the past five or ten years. In empyema and abscess following empyema, I have not used it as a prophylactic, as suggested by Dr. Beck, but I have used it in patients who had been operated on before this method was introduced, sinuses that had remained open for months or even years; patients who had been operated on by resection of the ribs primarily, and secondarily by Estlander's operation, and in one case I performed a Schede operation after these two operations. Of fourteen patients whom I have treated by this method, and I have two under treatment now, in twelve the sinuses have healed; and I am sure that they would have remained unhealed up to the present time were it not for this method. One feature of the method is that it does not matter whether the bronchus opens into the cavity or not. All physicians know how difficult it was formerly to treat and heal these cases, but with this method it does not matter how extensive the cavity is. I have had several cases in which I have been able to inject 600 or 700 c.c. of bismuth paste, and still the sinuses have healed. Therefore, I wish to impress on you the wisdom of using this bismuth paste in cases of empyema, no matter how bad they are. You will find that in a week or ten days or, perhaps, two weeks, the rise of temperature will disappear, and these patients that go about in a septic condition will no longer be septic. The anemia will begin to disappear, and you will be astonished to note the progress that these patients make.

A word as to the method of application. In speaking with various surgeons, I was impressed with the fact that they imagined that it was a difficult or troublesome problem to treat patients in this way. I take a large glass syringe, put the point or nozzle into the abscess, or if there is a sinus, put a rubber tube into the abscess through the sinus. I heat one part of bismuth and two parts of vaselin to 110 or 120 F., pour the mixture into the cavity until it is full and put a stopper of gauze into the outer opening. If the patient shows irritation, or bismuth poisoning, I put a rubber tube into the cavity, pour in hot olive oil, let the bismuth run out, and the symptoms of poisoning disappear, although in my own cases I have not had to do this. In 2 cases I have encountered in the practice of other surgeons, this procedure had to be carried out.

Dr. Charles A. Powers, Denver: I am impressed by the probable value of this operation of major thoracoplasty in pulmonary tuberculosis which has been brought to us by Professor Friedrich. It is employed by him in practically hopeless cases, and a number of his patients have shown marked improvement. I had the pleasure of witnessing one of these operations in Marburg in 1908, and was impressed by the skill, rapidity and thoroughness with which Professor Friedrich removed all the ribs from the first to the tenth, inclusive, in a young man with a progressive, unilateral cavernous pulmonary tuberculosis. The operation at first thought seems a staggering one, but I believe that there may be much of value in it. The modified pneumatic cabinet of Dr. Willy Meyer marks a definite advance in pulmonary surgery.

Dr. E. G. Beck, Chicago: The point to which I wish to speak now is again to call attention to the fact that there is danger of bismuth poisoning in this method. I do not think that it is necessary to use such large quantities of the paste. In Dr. Hartford's case only 1 ounce was used and the result was a good one. Furthermore, in case there is a blue line on the gums, this does not mean that it is a case of poisoning. I regard that as a favorable sign, because at that time the patients improve most rapidly. If, however, you find ulceration of the gums or pharynx or albumin in the urine, excessive loss of weight or cyanosis, then it is time to remove the paste, but not by scraping. If the cavity be scraped greater absorption is invited and more poisoning. This mistake was made in one case of which I have knowledge, and the patient died. One way to prevent the occurrence of poisoning is to inject warm olive oil into the cavity, leave it there for twenty-four hours, when it will have formed a gray emulsion which can easily be sucked out by a syringe, and the patient will begin to improve from that moment.

Professor Friedrich, Marburg, Germany: The important thing to be learned from this discussion is that we are in a position to treat empyema successfully, as shown by Murphy, Ochsner and Beck. We are getting beyond the point where empyema must be treated by resection of the ribs. Time forbids answering Dr. Powers' question *in extenso*. As to the use of positive and negative pressure, I think we must say that in most intrathoracic procedures these things are unnecessary; on the other hand, some of the successes in lung surgery depend on these measures. We have not advanced so far in lung surgery as we have in abdominal surgery. We do not hesitate to perform an exploratory laparotomy, and it is extremely probable that before long we will do likewise in the case of lung tumors, and it is here that the differential pressure method will be of great usefulness. We can expose the lung, inspect it, palpate it without doing injury, and when we can guarantee that we can employ asepsis as in exploratory laparotomy, greater progress will be insured than I have dared to indicate in my paper. I wish to say that in America I have had an unusual opportunity to see the unexpected and unusual success of animal experimentation, which must be our object if we want to see lung surgery advance. We must resort to procedures that make lung intervention free from danger. If the pulmonary artery to one lobe of the lung is tied, there results a complete atrophy of that lobe without any evidence or manifestation of disease or pathologic change. Six weeks after the tying, which is a very easy procedure, the lobe has atrophied completely and is empty of blood. For the extirpation of a tumor, that knowledge is of the greatest importance.

DR. WILLY MEYER, New York: From what I have seen in operations on dogs and human beings, I fully agree with Professor Friedrich that "when it comes to opening the chest wall in cases in which the pleura and lungs are adherent, we can, of course, operate safely without differential pressure, but if there are no adhesions present, there can be no doubt that the safe operation is that done under differential pressure." If we want to make progress in this field, and we all want to do that, now that the thoracic cavity has been opened to surgery in a safe way, we must recognize the fundamental rule: Operate under differential pressure if there are no adhesions between pulmonal and costal pleura. The gravity of the occurrence of an acute pneumothorax is no bugbear. It makes a great difference whether we operate on a healthy dog or on a diseased human being. If we must operate on the diseased human being, and there are no adhesions present, we can do a safe exploratory thoracotomy under differential pressure; the patient will most probably stand the operation well, provided he stands the anesthesia. If we do the operation without differential pressure, there is a chance that the patient will die in direct consequence of the operation. Therefore, the discoveries of Sauerbruch and Brauer operating under negative or positive differential pressure, are fundamental principles in intrathoracic surgical work. With regard to the preliminary hypodermic use of atropin, I read recently the report of an experimenter, published in THE JOURNAL, Jan. 30, 1909, p. 328. Every fowl operated on by these colleagues had died. When atropin was first used, the animals recovered. I have seen in my work on dogs that a hypodermic of atropin reduces the seriousness of major operations. Cancer of the esophagus is the field in which the surgeon can truly help suffering humanity. So far, every patient with cancer of the esophagus must die. In making use of operating under differential pressure, every surgeon of dexterity should now help in solving this problem. We must succeed in saving some of these patients, and I am sure that we will succeed.

With reference to Dr. Willard's humorous remark that with an aëroplane and my cabinet we would soon hear of patients being lifted into the skies and operated on there, I would say that in using my new large chamber we can place the patient up in the clouds, while the surgeon remains on earth. Converting the positive pressure cabinet, which forms a part of the large negative chamber into a negative one by reversing the pump. We produced negative pressure instead of positive, in the small chamber and a still lower negative pressure in the large chamber. Thus, for instance, operated with 744 degrees mercury in the large chamber and 752 in the small one. We simply shifted the atmosphere downward. In other words, my new apparatus makes thoracic work independent with reference to having 760 degrees mercury always represent one factor of the differential pressure. Perhaps this independence may prove of importance in the future when operating on tuberculous lungs. Thus, what Dr. Willard prophesied might happen, has happened already: a surgeon in Philadelphia or New York can operate on a patient who is lifted up into the clouds of the Adirondack Mountains.

DR. H. H. JANEWAY, New York: While there can be no question that negative and positive pressure is of advantage, I want to emphasize the fact that intrathoracic operations can be done better when we use artificial respiration than when we do not. In operations on the esophagus, this is true to a still greater degree. The most complicated conditions are made easy, and successful issue is the rule. This is a definite surgical problem that presents itself, and we must not shrink from it. By systematic experiments on animals, and by carefully compiling our observations on human beings, there is no reason why we should not hope some day to find a successful solution of the problem. It certainly is not beyond our powers, but we must observe, study and learn.

THE CLINICAL ESTIMATION OF AMMONIA IN THE URINE BY THE FORMALIN METHOD *

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The great importance of the routine estimation of the urinary ammonia in cases of acidosis is now attracting much attention, and the object of this paper is to report the study of a method the technic of which is so simple as to be available to the average clinical worker with limited laboratory facilities. It is hoped that the more general adoption of the ammonia determination will thus be encouraged. Of the several forms of acidosis always tending to develop symptoms of acid intoxication, those which may occur in diabetes and pregnancy are probably the most important. The chief urinary symptoms are: (1) the presence of the so-called acetone bodies, i. e., acetone, diacetic acid, and, in severe cases, beta-oxybutyric acid; (2) a marked increase in the relative and absolute output of ammonia. The quantitative determination of the acetone bodies, while highly desirable from the standpoints of both prognosis and treatment, is long and difficult. The ammonia, on the other hand, can be readily determined and affords an index not only as to the quantity of acetone bodies excreted, but to the total amount produced; in other words, it points out the degree of acidosis. The clinical determination of ammonia, therefore, is the only procedure readily practicable at present for indicating the danger-line of acid intoxication in diabetes and is of vastly greater significance than the sugar estimation. Emerson[1] says in this connection:

> Patients with much acidosis die of coma unless from some intercurrent disease, and there is no case of true coma yet studied without a previous acidosis. The amount of these (acid) bodies is perhaps better estimated by the ammonia output than by their direct determination, since the symptoms are caused by a withdrawal of the body alkali which the ammonia protects. An increase of ammonia means the presence of at least 10 gm. of oxybutyric acid per day, a marked increase of about 15 gm., 4 gm. of ammonia indicating 16 gm. of the acid. Naunyn considers that over 3 gm. of ammonia per day means danger of coma, and that if 4 gm. per day are excreted coma is sure to result unless alkaline treatment is begun at once.

On an ordinary mixed diet the absolute daily ammonia output is normally about 0.7 gm. This may increase to 8 gm. or even 12 gm. daily in diabetic patients. Simon[2] points out that high absolute values are quite constantly observed in diabetes, in which a daily elimination of from 4 to 5 gm. may be regarded as common. It is generally conceded that the relative increase of ammonia is more significant than variations in the absolute quantity. This is represented by the so-called ammonia quotient, i. e., the ammonia-nitrogen divided by the total nitrogen, and should always be determined whenever possible; it is normally from 3.5 to 5 per cent. In diabetic cases the ammonia quotient may rise to 40 or even 60 per cent. Goodall and Joslin[3] have recently made an extensive and valuable study of the ammonia output in diabetes, emphasizing its great importance. They conclude that quantities of ammonia reaching 5 gm. in twenty-four hours indicate a very severe form of diabetes, which usually proves fatal within a year, and that patients under 40 years of age tolerate an acidosis expressed in terms of 4 to 5 gm. ammonia far better than those above 50 years tolerate an acidosis of 2.5 to 4 gm. ammonia. Williams[4] states that the ammonia quotient may increase to 20 or even 40 per cent. in the pernicious vomiting of pregnancy and is an indication for emptying the uterus. In the case of nervous vomiting, reflex from the pelvis, and in eclampsia it is unchanged. The estimation of total nitrogen is not feasible clinically with existing methods, but, knowing the character of the diet, the absolute ammonia output alone is of very great value. The need for a simple method of estimation is obvious. The vacuum distillation methods of recent years represent great advances and are highly accurate, but they require time and facilities not possessed by the average clinical worker.

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* From the Chemical Laboratory of the U. S. Naval Medical School, Washington, D. C.

[1] Emerson, C. P.: Clinical Diagnosis, 1908, p. 203.

[2] Simon, C. E.: A Manual of Clinical Diagnosis, 1907, p. 416

[3] Goodall, H. W., and Joslin, E. P.: Bost. Med. and Surg. Jour., 1908, clviii, 655.

PRINCIPLE OF THE FORMALIN METHOD

An aqueous solution of an ammonium salt is treated with an excess of formalin and a few drops of phenolphthalein added as the indicator. It is now titrated with one-tenth normal sodium hydroxid, liberating ammonia, which reacts quantitatively with formalin to form hexamethylentetramine, which is neutral to phenolphthalein. The acid radical of the salt set free is titrated with the alkali, thus giving an index to the amount of ammonia present. This reaction has long been known in the literature.

PREVIOUS EXPERIMENTS

Ronchèse[5] first applied this principle to the estimation of ammonia in urine. Ten c.c. of urine were diluted to 50 c.c. with distilled water and titrated to the neutral point, using phenolphthalein as the indicator. Fifteen c.c. of 20 per cent. commercial formalin, made exactly neutral previously with sodium hydroxid, were then added, and the mixture then titrated with one-tenth normal sodium hydroxid. The second reading on the burette was reported as the number of cubic centimeters of decinormal ammonia in the sample. The method was checked by adding known quantities of ammonia to various urinary samples and it was claimed that quantitative recovery was the rule.

Repiton[6] has published a similar procedure in which acetaldehyde was substituted for the formalin; substantially the same claims were made for this process.

Malfatti[7] has recently reported a method essentially the same as the process of Ronchèse, but the degree of accuracy was tested with greater thoroughness. Controls were made with the methods both of Schlosing and Folin;[8] the formalin procedure showing a tendency to higher results. The influence of uric acid, urea, and creatinin on the titration was studied with negative results. No reference, however, was made to Ronchèse's work, and the latter[9] has called attention to this matter in a later article, emphasizing that Malfatti is not entitled to credit for the method.

Mathison[10] has recently modified this method by saturation of the urine with a neutral potassium oxalate before carrying out the titration, with a view to sharpening the end-point. Folin[11] first employed this salt to rule out the disturbing effects of ammonia salts and calcium phosphate in determining the end-point in the titration of urinary acidity, with phenolphthalein as the indicator. Mathison emphasizes the value of this modification. The results were checked by Shaffer's[12] method of vacuum distillation and found to be about 15 per cent. higher by the formalin process. He is unable to explain the discrepancy. Urea, uric acid, and creatinin were added to urine without affecting the ammonia values, thus in agreement with Malfatti's claim that these bodies are not sources of error.

PRESENT EXPERIMENTS

Several months ago I made a large number of titrations with various urinary samples, following the directions of Ronchèse and Malfatti. It was impossible to determine the end-point of the titration with any degree of sharpness, and the method was abandoned in this form. Cochineal and alizarin red were substituted as indicators for phenolphthalein, as they give sharp end-points in the presence of ammonia salts in aqueous distillates. They were abandoned as not sufficiently sensitive, even when the method was applied to chemically pure aqueous solutions of ammonia salts. The use of neutral potassium oxalate, as recommended by Folin, occurred to me in this connection before Mathison's paper appeared. The urine was saturated with the salt; the procedure otherwise was carried out exactly as described by the above authors. The end-point was now brought with a fair degree of sharpness; this improvement was particularly of advantage in deeply colored urines.

The method was applied to aqueous solutions of one-twentieth normal, one-tenth normal, and one-half normal ammonium chlorid with a resultant accuracy between 90 and 95 per cent. Known quanties of this salt were added to urine and recovered within the limits just stated. A series of estimations were carried out and controlled by Shaffer's vacuum distillation method. The data are assembled in the second and fourth columns of the accompanying table. The results of Shaffer's method average 20.33 per cent. higher, while Mathison obtained a corresponding figure of 15 per cent.

THE DETERMINATIONS OF AMMONIA

1 Sample of urine.	2 Formalin method uncleared. %	3 Formalin method cleared with lead. %	4 Shaffer's method. %
1	0.0586	0.0537	0.0507
2	0.0816	0.0705	0.0673
3	0.0782	0.0721	0.0697
4	0.0748	0.0736	0.0694
5	0.0591	0.0544	0.0501
6	0.0450	0.0382	0.0361
7	0.0599	0.0527	0.0499
8	0.0221	0.0162	0.0159
9	0.0629	0.0535	0.0507
10	0.0127	0.0102	0.0104
11	0.0559	0.0527	0.0504
12	0.0501	0.0425	0.0388
13	0.0476	0.0399	0.0354
14	0.0411	0.0348	0.0331
15	0.0642	0.0578	0.0544
16	0.0493	0.0461	0.0459
17	0.0331	0.0297	0.0253
18	0.0546	0.0535	0.0527
19	0.0433	0.0382	0.0367
20	0.0577	0.0534	0.0493
21	0.1470	0.1402	0.1309
22	0.0690	0.0620	0.0595
23	0.0476	0.0428	0.0408
24	0.0535	0.0476	0.0449

The sharpness of the end-point still left much to be desired, and it occurred to me that clearing the urine with subacetate of lead might be of advantage in removing interfering coloring matter before the titration. The excess of lead was removed by neutral potassium oxalate.

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[4] Emerson, C. P.: Clinical Diagnosis, 1908, p. 124.

[5] Ronchèse, A.: Bull. Soc. chim. de France, 1907, Series, i, 900.

[6] Repiton, F.: Compt. rend. Soc. d. biol., 1907, pp. 62, 1065, 1066.

[7] Malfatti, H.: Ztschr. f. anal. Chem., 1908, No. 5, p. 723.

[8] Folin, O.: Am. Jour. Physiol., 1908, ix, 265.

[9] Ronchèse, A.: Bull. Soc. chim. de France, 1908, Series 4, iii, 840.

[10] Mathison, G. C.: Brit. Med. Jour., March 20, 1909, p. 715; Am. Jour. Urol., May, 1909.

[11] Folin, O.: Ztschr. f. Physiol. Chem., 1902, xxxvii, 1.

[12] Shaffer, P.: Am. Jour. Physiol., 1902, viii, 330.

The results were striking. The end-point of the titration was brought out with nearly the sharpness obtained in titrating a watery distillate with cochineal or alizarin red. Many samples after dilution were practically colorless, and in no case was there more than a slight tinge of pigment. Known amounts of ammonia added to the urine were recovered with the same degree of accuracy as without the modification.

The technic of the modified method is as follows:

About 60 c.c. of filtered urine are treated with 3 gm. of basic lead acetate, well stirred, allowed to stand a few minutes and filtered. The filtrate is treated with 2 gm. of neutral potassium oxalate, again well stirred and filtered. Ten c.c. of the clear filtrate are diluted to about 50 c.c. with distilled water and a few drops of 1 per cent. phenolphthalein added. The fluid will be slightly aklaline or acid; more frequently the latter. Fifteen gm. of neutral potassium oxalate are added, thoroughly stirred, and the specimen exactly neutralized with one-tenth normal sodium hydroxid or sulphuric acid; 20 c.c. of 20 per cent. commercial formalin, previously made neutral, are added and the solution again titrated with one-tenth decinormal sodium hydroxid. Every cubic centimeter of one-tenth normal sodium hydroxid corresponds to 0.0017 gm. ammonia. The burette reading of the second titration multiplied by this factor represents the amount of ammonia in 10 c.c. of urine. The quantity is then calculated on the basis of the twenty-four-hour volume.

The technic of this method should recommend itself to practitioners for its simplicity; an estimation can readily be made in duplicate in ten minutes. The accompanying table in Column 2 shows the data by the modified method, which averaged only 6 per cent. higher than the results by the Shaffer method. It is obvious that this difference would be of no clinical importance, for only large quantitative changes in the output of ammonia have significance clinically. Clearing with lead not only improves the end-point, but improves the accuracy of the method by nearly 15 per cent.

Sörensen[13] recently published a paper with an important bearing on the accuracy of the formalin method. He has demonstrated that formalin combines with amido-acids, liberating acid radicals which may be titrated, thus giving a measure as to the amount of amido-acids present. A number of acids, i. e., alanin, leucin, tyrosin, etc., were titrated, and, with the exception of tyrosin, were capable of quantitative determination. Obviously such bodies in the urine would be included in the ammonia determination and thus be a source of error. This, however, could not account for the difference between Columns 3 and 4 of the table, as amido-acids are not removed from the urine by basic lead acetate. Sörensen reports that uric acid reacts with formalin and this body is thrown out by the clearing reagent. Uric acid was estimated in a number of the samples referred to, but the quantity present accounted for only a part of the differences observed between Columns 1 and 2. Hippuric acid, which is not thrown down by clearing, was tested, but does not affect the formalin titration even when added in large amounts.

The important consideration clinically is the extent of the occurrence of amido-acids in the urine. Brugsch and Schittenhelm,[14] in reviewing the subject recently, state that glycocoll is the only amido-acid thus far demonstrated in normal urine and occurs in very slight amounts. Leucin and tyrosin have been shown in the cases of acute yellow atrophy, phosphorus-poisoning and in diabetic coma. Mathison says that it is just in those pathologic conditions when the output of ammonia is high that large quantities of amido-acids are excreted. These bodies replace a portion of urea, so their significance clinically is in the same direction as ammonia. If the formalin method gives the sum of ammonia and amido-acids, the ammonia could be estimated by Shaffer's vacuum distillation method and the amido-acids indirectly determined by difference.

A PLEA FOR THE MORE CAREFUL DIAGNOSIS AND TREATMENT OF FRACTURES OF THE EXTREMITIES *

E. DENEGRE MARTIN, M.D.
NEW ORLEANS

As in all other surgical conditions, great advancement has been made in the treatment of fractures. The suspension method of the lower extremities perfected by Hodgen and the ambulatory treatment suggested by Krause, Dollinger and others, have done much not only for the comfort of patients, but unquestionably have saved many an old sufferer from death by pneumonia. The introduction of anesthesia and the certainty of asepsis have reduced the mortality in compound fractures to practically *nil*. The advent of the x-ray has made a doubtful diagnosis a certainty and excellent results have been secured by this means in many apparently hopeless cases. It may, therefore, appear strange in the present-day advancement of surgical progress, when technic has reached almost a point of perfection, that one should be pleading for more thoroughness in so important a condition as the treatment of fractures. It is not that this branch of surgery has received less attention, for, thanks to Stimson, Scudder, Allis, Pilcher, Cabot, Hodgen, Whitman, Smith, Kocher, Korsch, Dollinger, Downey, and hundreds of others who have contributed so much to the literature, our technic is nearly perfect, but I have been forcibly impressed by the fact that we are treating to-day more deformed and ununited fractures as secondary conditions than any others in surgery. It strikes me that these bad results are due to one of several conditions; primarily, to our methods of treatment, and, secondarily, to the fact that this particular branch of surgery has not been assigned to its proper domain.

In regard to the first point, is it not a fact that students are taught to treat fractures from the benches? The subject is hurriedly gone over, probably a dozen or more fractures are demonstrated in one lecture, a number of intricate splints are exhibited, and reference is made to plaster of Paris as one of the materials to be used in the manufacture of splints. What is the result? Unless the student is fortunate in securing an interneship in some hospital, he goes out to treat fractures with a vague idea that it means a broken bone, and if he can only put it in position and hold it with some form of apparatus it will unite and that will be the end of it. If he should attempt to use plaster, of which he knows absolutely nothing, he has no means of telling whether it be good or bad, and the chances are that it will not set. The result is a deformed or ununited fracture.

In regard to the second point, there is no question that in this special line of work mechanical skill is required. How many physicians possess this? The orthopedist is the outcome of a demand for the correction of

deformities, most of which result from badly treated fractures. The orthopedist is, or should be, a mechanical surgeon; why not, therefore, in this era of specialists let him utilize his skill, not wholly for the correction of deformities, but for their prevention.

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[13] Sörensen: Biochem. Ztschr., 1908, vii, 47.

[14] Brugsch, J., and Schittenhelm, A.: Lehrbuch klinischer Untersuchungsmethoden, 1908, pp. 463, 464 and 465.

* Read in the Section on Surgery of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

No inexperienced physician would attempt to do a laparotomy for some abdominal condition with which he was not familiar, and yet how many would think of referring a simple fracture to a surgeon? In the former case, life might be involved; in the latter, the worst that could happen would be an imperfect result, a crippled limb which the poor patient is convinced was the outcome of his misfortune and not the result of the faulty technic applied.

It is time for every practitioner to realize that, unless he has had some surgical experience and is equipped with an *x*-ray outfit, it is as much his duty, when possible, to refer these patients to properly qualified surgeons as other cases which he does not feel will fare well in his hands.

It is not my purpose to discuss the treatment of fractures, but I am glad to see so many medical men advocating the operative treatment. I see no reason why we should hesitate to expose a fracture at any time we fail to get good apposition. It is time that we should realize that the bony framework of the human body is its most important structure, and if this is injured at any point, or is so much out of place that muscular action is interfered with, we have a hopeless cripple on our hands; and I regret to say that in many instances the crippled condition is due not so much to the cause as to the treatment.

We hear many criticisms of the use of wire and staples in the treatment of ununited fractures, and numerous are the suggestions made to do away with the use of all foreign bodies. I believe that whenever it is possible to reduce a fracture and to hold it in position with a properly fitting splint it should be done, but I also believe that when there is danger of the fragments slipping the best results will be obtained by the use of wire or staples, even if these have to be removed later. My experience is that a staple is less liable to give trouble than wire and is much more efficient. For years I have used staples of different sizes made of piano wire, which can be driven into any bone, and these have never given trouble, unless infection followed, and they are always easy to remove when necessary.

In conclusion, I would suggest that we lay more stress on the importance of this branch of surgery, which furnishes material for more malpractice suits than any other, and is costing railroads and manufactories thousands of dollars annually.

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ABSTRACT OF DISCUSSION

Dr. C. L. Scudder, Boston: The operative treatment of recent closed fractures is a very vital subject, surprisingly suggestive, full of interest to every one. We all believe in the operative treatment of certain fractures, provided the indications are unmistakable. Operating on freshly fractured bone is to-day safe if the operative technic is perfect. Osteitis and necrosis do not commonly follow properly placed direct fixative materials—wire, nails, pegs, plates or screws. Union of the fracture is usually facilitated and not delayed by operation. Damage to the soft parts extensive enough to cause postoperative difficulties may be avoided and is not a menace. The local conditions surrounding recent fracture are quite different from those discovered at the seat of an old fracture.

In our enthusiasm for operative victories we must stop and ask ourselves, are we securing from the non-operative treatment all that we possibly can? When should we employ operative measures? What should be the general indications for operation?

Deficiencies in non-operative treatment, which unquestionably do exist, should be remedied, not by operating more frequently but by exercising greater care in the employment of *the fundamental principles recognized the world over* as underlying the treatment of all fractures, namely, general anesthesia, traction, counter-traction; pressure, counter-pressure; the exact application of anatomic knowledge; immobilization; the comparative use of the Roentgen ray; massage; the care of joints adjacent to the injury, and, ultimately, the securing approximately anatomic form and perfect function. Whenever and wherever these basic principles are applied intelligently and consistently, the results are uniformly good and the operative margin is then narrow. Bardenheuer, in Germany, has demonstrated the efficiency of non-operative methods. Even though Bardenheuer's details may be too cumbersome for general use, he has proved that results following the consistent employment of non-operative methods are satisfactory. That non-operative measures are efficient in the treatment of the vast majority of fractures has been proved in this country over and over again in hospital and private practice. Many facts in corroboration of this statement have been recently collected by DaCosta and others, and are still being assembled, and are worthy of consideration. I want to dissuade any one from believing that an anatomically perfect result following a fractured bone is absolutely necessary to a functionally useful limb, or is necessary to the individual. Approximate reduction, that is, non-anatomic, is followed by union and by a functionally useful part, and *by no apparent deformity to the* patient or his non-professional friends.

Stimson recently said regarding this matter: "Irregularities of outline are functionally and cosmetically unimportant in the great majority of cases in which proper non-operative treatment has been used." *Anatomic results are ideal and* theoretically desirable. Practically, they are unessential. The ideal treatment may not be the most expedient. Operation is often contraindicated chiefly because it is unnecessary. It must be remembered that the results of operative treatment *may not be more satisfactory than are the results from non-*operative treatment. Operation does not carry with it or imply the guarantee of a perfect anatomic result. The majority of simple or closed fractures can be satisfactorily treated by non-operative methods. The broad indication for operation, in my opinion, on recent closed fractures, in the absence of great damage to soft parts, including vessels and nerves, is the inability to bring fragments into apposition and into good alignment. Let all surgeons bestow as much thought and personal consideration on the non-operative methods in the treatment of fractured bone as the importance of the subject demands, and our non-operative results, good as they are, will improve, and the number of operable cases will increase slowly and only for good and sufficient reasons.

Dr. W. Lemoyne Wills, Los Angeles, Cal.: It was my good fortune four years ago to see Lambotte demonstrate his method for fixation of fractures on a cadaver at the Brussels congress, and to see his convalescent patients at Stuyvensburg Hospital at Antwerp next day. For two years past I have used this method and appliance. I have had seven cases of fracture of femur and two of humerus. Of these cases I have had five simple fractures in mid-thigh and near the knee-joint, varying from thirty hours to two weeks in time from injury to operation, two ununited fractures each six weeks old with large amounts of callus and faulty angulation of fragments. Two fractures of humerus were six weeks and three months old, respectively; the latter was an old comminuted, infected gunshot fracture of the humerus with complete musculospiral paralysis. On this case I put a half-sized apparatus and relieved the pressure on the nerve which was between ends at point of fracture; the patient is making a fine recovery. Absolute fixation is desired most of all. With the Lambotte apparatus the leg can be lifted by the heel, and when union has taken place all foreign material is removed. Patients differ greatly in rapidity of callus formation, usually sufficient has been thrown out to permit safe removal of the apparatus in from four to seven weeks. The sooner the drills are out the better. The drill holes soon close and give no trouble. We all know what unsatisfactory results are obtained by the commonly used closed treatment, and by the suturing and wiring of the fragments, when there may be shortening from one-half to one and a half or two inches. I have shortening, in only one case—one-fourth of an inch—and that because the man disobeyed orders and put weight too soon on a soft callus. After absolute fixation the chief advantages are: the ability to inspect the wound every day; less injury to the periosteum than by any other operative method; and more rapid and normal callus formation and union. The first dressing (removed in twenty-four hours) will be found saturated with serum and blood. I use two or three drains, which are removed in two or three days, leaving the wound perfectly dry. It is better to have the serum and blood out than inside congesting the damaged tissues. This is really an ambulatory method, enabling the patient to be put in a wheeled chair, after ten days, and kept in the open air. Of course, absolute asepsis must be preserved. I have had infection in two cases, but that was due to severe bruising and crushing of muscles at time of injury, and the delay in operation, two weeks having elapsed.

Dr. A. J. Ochsner, Chicago: My ideas on treatment of fractures are pronounced. In certain fractures, like that of the patella, the anatomic conditions are such that the results, even with the best non-operative treatment, must be bad. There are other conditions in which these conditions must be bad, but with the exception of these conditions, if we employ certain definite principles the results must be good. Of course, if we do not teach our assistants that a fracture held by plaster-of Paris in a deformed position is sure to heal in that position, we must expect to get bad results. If we do not teach our assistants the proper use of splints and the proper methods of reduction of fractures we must not look for good results. But if a surgeon with good judgment and with experience in these principles will employ them, the number of cases in which the operative treatment should be employed must be very small.

Dr. Leonard Freeman, Denver: There are two kinds of fractures which seem to demand operation, providing the surroundings are perfect, and the operator is competent. In one kind we are unable to reduce the fragments at all; in the other, although we are able to place the bones in apposition, they have little or no tendency to stay there. I desire to exhibit a clamp which I have devised for holding fractures of the latter class which cannot be controlled by ordinary means. It is not so much the clamp to which I wish to call attention, but rather the method of its application. The clamp is simple; it consists of two steel strips fastened together by screws which can be tightened with a key. (Figs. 1 and 2 and Fig. 3a.) The essential feature is that these strips of steel are lined with soft wood. From two to four long screws, as required, are inserted in the end of the fragments and allowed to project beyond the skin. The screws are then clamped together by means of the wood-lined steel strips, the wood holding them firmly and preventing slipping. There is no question as to the effectiveness of the clamp when it is once in place. The problem is to use it in recent fractures without making a large wound and without extensive injury to the tissues—in other words, without exposing the patient to the danger of a severe operation. This could readily be done if it were possible to insert the screws into the bone through small incisions in the skin, adjust the fragments, and then clamp the screws; but any one who attempts to do this without proper apparatus will find that the drill is apt to slip, and that when an effort is made to find the hole with the end of the screw after removing the drill it cannot be done owing to the intervention of the soft parts. Drills cannot be left in place as substitutes for screws, because they do not fit tightly enough. I have overcome this difficulty by using a small steel tube which is provided at one end with sharp teeth. Into this tube is placed an obturator (Fig. 3c) with a blunt point which obscures the teeth and enables one to slip a screw (Fig. 3e) through a small incision in the skin and through the soft parts to the bone. The obturator is then removed and the tube tapped down so that the teeth engage in the periosteum, thus preventing slipping. A drill (Fig. 3d) is then introduced through the tube after taking out the obturator. The drill has an adjustable shoulder so that it will remain central within the tube. A hole is then bored into the bone, the drill is removed, and a screw can easily be introduced, the tube being pulled out over the screw. In this way as many screws as necessary can be employed and left to protrude through small openings in the skin which produce but insignificant scars. This apparatus can be used to great advantage in certain fractures. I have employed it in fracture of the jaw near the angle, where it is difficult to keep the jaw from dropping backward in spite of various uncomfortable splints which have been devised. By using two screws, one in each fragment, and clamping them together on the outside, the jaw is easily and perfectly held in place. Fractures of the clavicle can also be handled in this manner, as can also oblique breaks of the tibia and fractures of the humerus and patella. I do not believe that anything is added to the danger of infection, especially if the screws are placed far enough from the break and if proper asepsis is employed, as they soon become effectually walled off from the surrounding tissues.

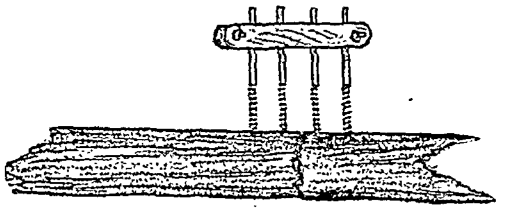

Fig. 1.

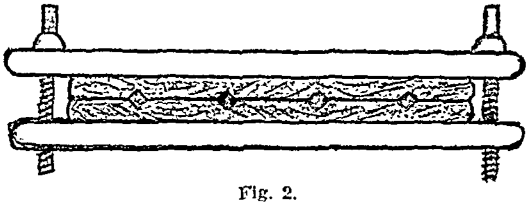

Fig. 2.

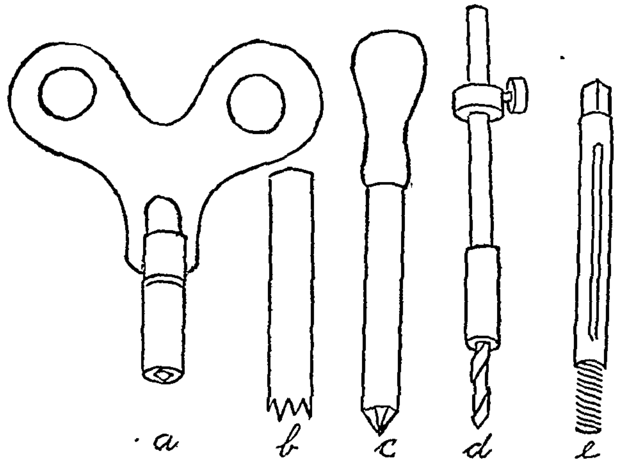

Fig. 3.

Dr. John B. Walker, New York City: I believe that our knowledge of the treatment of fractures in America has not advanced so rapidly as it has in the treatment of abdominal and other conditions. A few years ago a leading London surgeon attempted to ascertain what was the ultimate or end-result in these fracture cases, and he sent out many letters to which he received 400 replies. He found that what was called satisfactory in London was not so regarded in the outlying districts. In the large cities the duration of the treatment of a fracture of the femur was from four to six months, whereas in the outlying districts it was from six to nine months. Since the introduction of the Roentgen ray this matter of the proper

deformities, most of which result from badly treated fractures. The orthopedist is, or should be, a mechanical surgeon; why not, therefore, in this era of specialists let him utilize his skill, not wholly for the correction of deformities, but for their prevention.

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Deficiencies in non-operative treatment, which unquestionably do exist, should be remedied, not by operating more frequently but by exercising greater care in the employment of the fundamental principles recognized the world over as underlying the treatment of all fractures, namely, general anesthesia, traction, counter-traction; pressure, counter-pressure; the exact application of anatomic knowledge; immobilization; the comparative use of the Roentgen ray; massage; the care of joints adjacent to the injury, and, ultimately, the securing approximately anatomic form and perfect function. Whenever and wherever these basic principles are applied intelligently and consistently, the results are uniformly good and the operative margin is then narrow. Bardenheuer, in Germany, has demonstrated the efficiency of non-operative methods. Even though Bardenheuer's details may be too cumbersome for general use, he has proved that results following the consistent employment of non-operative methods are satisfactory. That non-operative measures are efficient in the treatment of the vast majority of fractures has been proved in this country over and over again in hospital and private practice. Many facts in corroboration of this statement have been recently collected by DaCosta and others, and are still being assembled, and are worthy of consideration. I want to dissuade any one from believing that an anatomically perfect result following a fractured bone is absolutely necessary to a functionally useful limb, or is necessary to the individual. Approximate reduction, that is, non-anatomic, is followed by union and by a functionally useful part, and by no apparent deformity to the patient or his non-professional friends.

Stimson recently said regarding this matter: "Irregularities of outline are functionally and cosmetically unimportant in the great majority of cases in which proper non-operative treatment has been used." Anatomic results are ideal and theoretically desirable. Practically, they are unessential. The ideal treatment may not be the most expedient. Operation is often contraindicated chiefly because it is unnecessary. It must be remembered that the results of operative treatment may not be more satisfactory than are the results from non-operative treatment. Operation does not carry with it or imply the guarantee of a perfect anatomic result. The majority of simple or closed fractures can be satisfactorily treated by non-operative methods. The broad indication for operation, in my opinion, on recent closed fractures, in the absence of great damage to soft parts, including vessels and nerves, is the inability to bring fragments into apposition and into good alignment. Let all surgeons bestow as much thought and personal consideration on the non-operative methods in the treatment of fractured bone as the importance of the subject demands, and our non-operative results, good as they are, will improve, and the number of operable cases will increase slowly and only for good and sufficient reasons.

Dr. W. Lemoyne Wills, Los Angeles, Cal.: It was my good fortune four years ago to see Lambotte demonstrate his method for fixation of fractures on a cadaver at the Brussels congress, and to see his convalescent patients at Stuyvensburg Hospital at Antwerp next day. For two years past I have used this method and appliance. I have had seven cases of fracture of femur and two of humerus. Of these cases I have had five simple fractures in mid-thigh and near the knee-joint, varying from thirty hours to two weeks in time from injury to operation, two ununited fractures each six weeks old with large amounts of callus and faulty angulation of fragments. Two fractures of humerus were six weeks and three months old, respectively; the latter was an old comminuted, infected gunshot fracture of the humerus with complete musculospiral paralysis. On this case I put a half-sized apparatus and relieved the pressure on the nerve which was between ends at point of fracture; the patient is making a fine recovery. Absolute fixation is desired most of all. With the Lambotte apparatus the leg can be lifted by the heel, and when union has taken place all foreign material is removed. Patients differ greatly in rapidity of callus formation, usually sufficient has been thrown out to permit safe removal of the apparatus in from four to seven weeks. The sooner the drills are out the better. The drill holes soon close and give no trouble. We all know what unsatisfactory results are obtained by the commonly used closed treatment, and by the suturing and wiring of the fragments, when there may be shortening from one-half to one and a half or two inches. I have shortening, in only one case—one-fourth of an inch—and that because the man disobeyed orders and put weight too soon on a soft callus. After absolute fixation the chief advantages are: the ability to inspect the wound every day; less injury to the periosteum than by any other operative method; and more rapid and normal callus formation and union. The first dressing (removed in twenty-four hours) will be found saturated with serum and blood. I use two or three drains, which are removed in two or three days, leaving the wound perfectly dry. It is better to have the serum and blood out than inside congesting the damaged tissues. This is really an ambulatory method, enabling the patient to be put in a wheeled chair, after ten days, and kept in the open air. Of course, absolute asepsis must be preserved. I have had infection in two cases, but that was due to severe bruising and crushing of muscles at time of injury, and the delay in operation, two weeks having elapsed.

Dr. A. J. Ochsner, Chicago: My ideas on treatment of fractures are pronounced. In certain fractures, like that of the patella, the anatomic conditions are such that the results, even with the best non-operative treatment, must be bad. There are other conditions in which these conditions must be bad, but with the exception of these conditions, if we employ certain definite principles the results must be good. Of course, if we do not teach our assistants that a fracture held by plaster-of Paris in a deformed position is sure to heal in that position, we must expect to get bad results. If we do not teach our assistants the proper use of splints and the proper methods of reduction of fractures we must not look for good results. But if a surgeon with good judgment and with experience in these principles will employ them, the number of cases in which the operative treatment should be employed must be very small.

Dr. Leonard Freeman, Denver: There are two kinds of fractures which seem to demand operation, providing the surroundings are perfect, and the operator is competent. In one kind we are unable to reduce the fragments at all; in the other, although we are able to place the bones in apposition, they have little or no tendency to stay there. I desire to exhibit a clamp which I have devised for holding fractures of the latter class which cannot be controlled by ordinary means. It is not so much the clamp to which I wish to call attention, but rather the method of its application. The clamp is simple; it consists of two steel strips fastened together by screws which can be tightened with a key. (Figs. 1 and 2 and Fig. 3a.) The essential feature is that these strips of steel are lined with soft wood. From two to four long screws, as required, are inserted in the end of the fragments and allowed to project beyond the skin. The screws are then clamped together by means of the wood-lined steel strips, the wood holding them firmly and preventing slipping. There is no question as to the effectiveness of the clamp when it is once in place. The problem is to use it in recent fractures without making a large wound and without extensive injury to the tissues—in other words, without exposing the patient to the danger of a severe operation. This could readily be done if it were possible to insert the screws into the bone through small incisions in the skin, adjust the fragments, and then clamp the screws; but any one who attempts to do this without proper apparatus will find that the drill is apt to slip, and that when an effort is made to find the hole with the end of the screw after removing the drill it cannot be done owing to the intervention of the soft parts. Drills cannot be left in place as substitutes for screws, because they do not fit tightly enough. I have overcome this difficulty by using a small steel tube which is provided at one end with sharp teeth. Into this tube is placed an obturator (Fig. 3c) with a blunt point which obscures the teeth and enables one to slip a screw (Fig. 3e) through a small incision in the skin and through the soft parts to the bone. The obturator is then removed and the tube tapped down so that the teeth engage in the periosteum, thus preventing slipping. A drill (Fig. 3d) is then introduced through the tube after taking out the obturator. The drill has an adjustable shoulder so that it will remain central within the tube. A hole is then bored into the bone, the drill is removed, and a screw can easily be introduced, the tube being pulled out over the screw. In this way as many screws as necessary can be employed and left to protrude through small openings in the skin which produce but *insignificant* scars. This apparatus can be used to great advantage in certain fractures. I have employed it in fracture of the jaw near the angle, where it is difficult to keep the jaw from dropping backward in spite of various uncomfortable splints which have been devised. By using two screws, one in each fragment, and clamping them together on the outside, the jaw is easily and perfectly held in place. Fractures of the clavicle can also be handled in this manner, as can also oblique breaks of the tibia and fractures of the humerus and patella. I do not believe that anything is added to the danger of infection, especially if the screws are placed far enough from the break and if proper asepsis is employed, as they soon become effectually walled off from the surrounding tissues.

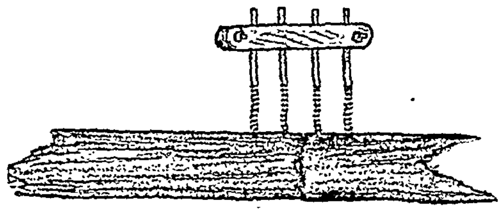

Fig. 1.

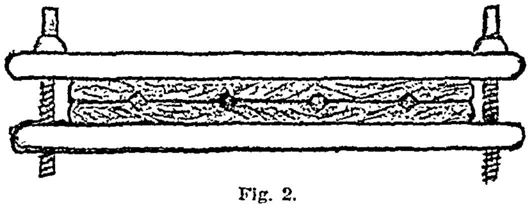

Fig. 2.

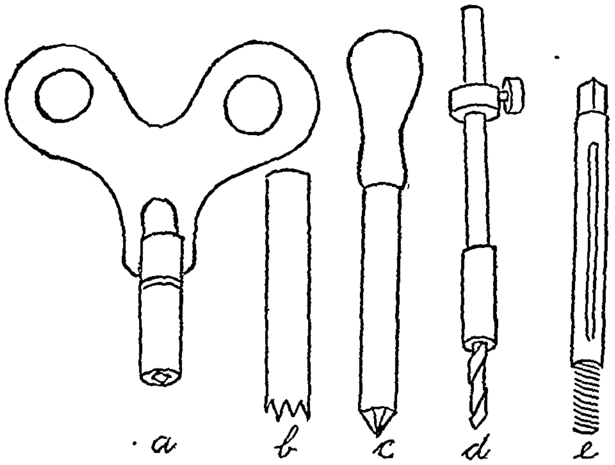

Fig. 3.

Dr. John B. Walker, New York City: I believe that our knowledge of the treatment of fractures in America has not advanced so rapidly as it has in the treatment of abdominal and other conditions. A few years ago a leading London surgeon attempted to ascertain what was the ultimate or end-result in these fracture cases, and he sent out many letters to which he received 400 replies. He found that what was called *satisfactory* in London was not so regarded in the outlying districts. In the large cities the duration of the treatment of a fracture of the femur was from four to six months, whereas in the outlying districts it was from six to nine months. Since the introduction of the Roentgen ray this matter of the proper

deformities, most of which result from badly treated fractures. The orthopedist is, or should be, a mechanical surgeon; why not, therefore, in this era of specialists let him utilize his skill, not wholly for the correction of deformities, but for their prevention.

No inexperienced physician would attempt to do a laparotomy for some abdominal condition with which he was not familiar, and yet how many would think of referring a simple fracture to a surgeon? In the former case, life might be involved; in the latter, the worst that could happen would be an imperfect result, a crippled limb which the poor patient is convinced was the outcome of his misfortune and not the result of the faulty technic applied.

It is time for every practitioner to realize that, unless he has had some surgical experience and is equipped with an *x*-ray outfit, it is as much his duty, when possible, to refer these patients to properly qualified surgeons as other cases which he does not feel will fare well in his hands.

It is not my purpose to discuss the treatment of fractures, but I am glad to see so many medical men advocating the operative treatment. I see no reason why we should hesitate to expose a fracture at any time we fail to get good apposition. It is time that we should realize that the bony framework of the human body is its most important structure, and if this is injured at any point, or is so much out of place that muscular action is interfered with, we have a hopeless cripple on our hands; and I regret to say that in many instances the crippled condition is due not so much to the cause as to the treatment.

We hear many criticisms of the use of wire and staples in the treatment of ununited fractures, and numerous are the suggestions made to do away with the use of all foreign bodies. I believe that whenever it is possible to reduce a fracture and to hold it in position with a properly fitting splint it should be done, but I also believe that when there is danger of the fragments slipping the best results will be obtained by the use of wire or staples, even if these have to be removed later. My experience is that a staple is less liable to give trouble than wire and is much more efficient. For years I have used staples of different sizes made of piano wire, which can be driven into any bone, and these have never given trouble, unless infection followed, and they are always easy to remove when necessary.

In conclusion, I would suggest that we lay more stress on the importance of this branch of surgery, which furnishes material for more malpractice suits than any other, and is costing railroads and manufactories thousands of dollars annually.

741 Carondelet Street.

ABSTRACT OF DISCUSSION

Dr. C. L. Scudder, Boston: The operative treatment of recent closed fractures is a very vital subject, surprisingly suggestive, full of interest to every one. We all believe in the operative treatment of certain fractures, provided the indications are unmistakable. Operating on freshly fractured bone is to-day safe if the operative technic is perfect. Osteitis and necrosis do not commonly follow properly placed direct fixative materials—wire, nails, pegs, plates or screws. Union of the fracture is usually facilitated and not delayed by operation. Damage to the soft parts extensive enough to cause postoperative difficulties may be avoided and is not a menace. The local conditions surrounding recent fracture are quite different from those discovered at the seat of an old fracture.

In our enthusiasm for operative victories we must stop and ask ourselves, are we securing from the non-operative treatment all that we possibly can? When should we employ operative measures? What should be the general indications for operation?

Deficiencies in non-operative treatment, which unquestionably do exist, should be remedied, not by operating more frequently but by exercising greater care in the employment of the fundamental principles recognized the world over as underlying the treatment of all fractures, namely, general anesthesia, traction, counter-traction; pressure, counter-pressure; the exact application of anatomic knowledge; immobilization; the comparative use of the Roentgen ray; massage; the care of joints adjacent to the injury, and, ultimately, the securing approximately anatomic form and perfect function. Whenever and wherever these basic principles are applied intelligently and consistently, the results are uniformly good and the operative margin is then narrow. Bardenheuer, in Germany, has demonstrated the efficiency of non-operative methods. Even though Bardenheuer's details may be too cumbersome for general use, he has proved that results following the consistent employment of non-operative methods are satisfactory. That non-operative measures are efficient in the treatment of the vast majority of fractures has been proved in this country over and over again in hospital and private practice. Many facts in corroboration of this statement have been recently collected by DaCosta and others, and are still being assembled, and are worthy of consideration. I want to dissuade any one from believing that an anatomically perfect result following a fractured bone is absolutely necessary to a functionally useful limb, or is necessary to the individual. Approximate reduction, that is, non-anatomic, is followed by union and by a functionally useful part, and by no apparent deformity to the patient or his non-professional friends.

Stimson recently said regarding this matter: "Irregularities of outline are functionally and cosmetically unimportant in the great majority of cases in which proper non-operative treatment has been used." Anatomic results are ideal and theoretically desirable. Practically, they are unessential. The ideal treatment may not be the most expedient. Operation is often contraindicated chiefly because it is unnecessary. It must be remembered that the results of operative treatment may not be more satisfactory than are the results from non-operative treatment. Operation does not carry with it or imply the guarantee of a perfect anatomic result. The majority of simple or closed fractures can be satisfactorily treated by non-operative methods. The broad indication for operation, in my opinion, on recent closed fractures, in the absence of great damage to soft parts, including vessels and nerves, is the inability to bring fragments into apposition and into good alignment. Let all surgeons bestow as much thought and personal consideration on the non-operative methods in the treatment of fractured bone as the importance of the subject demands, and our non-operative results, good as they are, will improve, and the number of operable cases will increase slowly and only for good and sufficient reasons.

Dr. W. Lemoyne Wills, Los Angeles, Cal.: It was my good fortune four years ago to see Lambotte demonstrate his method for fixation of fractures on a cadaver at the Brussels congress, and to see his convalescent patients at Stuyvensburg Hospital at Antwerp next day. For two years past I have used this method and appliance. I have had seven cases of fracture of femur and two of humerus. Of these cases I have had five simple fractures in mid-thigh and near the knee-joint, varying from thirty hours to two weeks in time from injury to operation, two ununited fractures each six weeks old with large amounts of callus and faulty angulation of fragments. Two fractures of humerus were six weeks and three months old, respectively; the latter was an old comminuted, infected gunshot fracture of the humerus with complete musculospiral paralysis. On this case I put a half-sized apparatus and relieved the pressure on the nerve which was between ends at point of fracture; the patient is making a fine recovery. Absolute fixation is desired most of all. With the Lambotte apparatus the leg can be lifted by the heel, and when union has taken place all foreign material is removed. Patients differ greatly in rapidity of callus formation, usually sufficient has been thrown out to permit safe removal of the apparatus in from four to seven weeks. The sooner the drills are out the fragments. Judging by this simple standard, there is no question that a vast number, the majority, of fractures of the extremities can be successfully treated without operation. It is only right that the art of bone-setting by bloodless manipulation should be cultivated and encouraged more than ever as an essential part of the surgeon's training. On the other hand, when it is evident that reduction is impossible and that deformity with impaired function is unavoidable in any given case of fracture, there should be no hesitation in resorting at once to the open treatment, provided all other conditions, including the operator's training, are favorable to the procedure. In conclusion, I would ask: What are we to do in operative cases in which a perfect result is obtained, a real cabinet-maker's approximation, and yet in which callus totally fails and there is no ossification? This failure of repair which I have observed in operative cases, and especially after wiring, creates a serious problem that is not solved by further operation, additional traumatism, nor by Bier's blood injections at the seat of fracture. In these cases, what will accomplish the desired result? Will orthopedic "walking" braces which do not constrict the limb, and which permit the systematic application of massage combined with hot air hyperemia? It is the walking splint, however, that is the most effective, and, in view of the not infrequent failure of union after operation, I am glad to commend the ambulant orthopedic splint as a reliable treatment for this deplorable condition.

Dr. DeForest Willard, Philadelphia: Surgeons differ widely in their advocacy of operative or non-operative treatment in fractures. Dr. Martin called attention to the question of diagnosis. There is at present no reason for failing to know whether we have succeeded in the replacement of fracture. The Roentgen ray will tell us all this. It is not only necessary to reduce the fracture, but to keep it reduced. There are certainly a large number of simple fractures that do not require operative treatment, but there are cases in which it is necessary to resort to operation, *i. e.,* those in which reduction and retention are impossible and especially delayed union, non-union, compound fractures and comminuted fractures. Fracture patients often come to the hospital and they are not seen by the surgeon at all. They are treated by the house officers; they are sometimes treated carelessly, and a bad result is sure to follow. We all have reason to know the annoyance that comes from a malpractice suit, and the Roentgen ray is adding to our troubles because while many cases are functionally perfect, they are not anatomically perfect and a jury is readily influenced. The Roentgenogram is only a shadow and not the thing itself. Look at your own shadow as you are walking on the pavement. It is not at all like yourself. In comminuted and ununited fractures I have tried wires, staples, screws, plates, clamps and everything else. We all know how often we are obliged afterward to cut down and remove these substances; therefore, whenever it is possible, I use chromicized catgut rather than any other foreign body. Magnuson has shown that metal-headed ivory screws that can be cut off on a level with the periosteum can be inserted into the bone and soon become a part of it. I believe that the use of such ivory screws will revolutionize the treatment of ununited fractures.

Dr. Charles E. Thompson, Scranton, Pa.: Dr. Martin said that the fracture might slip, and stopped there. We must not be discouraged because our fractures slip. We must reduce them again, until we retain them in proper position. Dr. Ochsner spoke about the bad results obtained in the treatment of fractures in the general hospitals, but nothing has been said about the bad results obtained out in the hills by the general practitioners, nor has anything been said about the cause of these bad results. I hope college professors will tell us why these general practitioners cannot be taught to reduce fractures. Of all the delusions and snares, perpetrated on an unsuspecting profession, Buck's extension apparatus is the worst. Dr. Scudder told us something about the reduction of fractures but did not go far enough. If a fracture, say of the femur, becomes displaced after reduction, in my experience the most common cause of displacement is a muscular spasm occurring during sleep. If the fragments cannot be retained in a direct line I have frequently succeeded in retaining them at an angle, letting that deformity prevail until some union has taken place, when the bone can be very easily set in a straight line. The difficulty of having plaster set and stay set can be obviated by using crinolin sized in starch. If the bone cannot be held in proper position, a slight amount of lateral pressure, such as placing a wedge of cotton or gauze on the inside of the plaster on the third or fourth day after reduction, will hold the bones in perfect apposition. If this method fails, I have in a few cases succeeded by putting on a counter-extension transversely, and holding up the bone in the same direction, where there was a great tendency to displacement in an upward or downward direction. In another case, a compound fracture of the tibia having failed to be retained in position by ordinary methods, I inserted an osteotome, and securing a slight leverage between the ends of the bones, held then in place and had an assistant hold the osteotome in position; I then incorporated osteotome and assistant's hands in the cast. The assistant's hand was removed after the cast was hard, after the patient was put to bed; the osteotome was removed the next day. The result was ideal.

Dr. Robert F. Weir, New York City: We have been told, and correctly so, that fractures are hard things to treat. They tell us also that in the hospitals they are badly treated because the juvenile intern does the treating. That is true, but there is another reason which has not been mentioned why there are so many cases of malpractice. Malpractice suits are brought against the physicians who are only occasionally surgeons. If surgeons say that it is hard to treat a fracture, how can the ordinary practitioner expect to succeed in doing so? He does not attempt to do an abdominal operation, but he does not stop at treating a fracture, which we all know is a very hard thing to manage successfully. The majority of cases should be judged not by hospital treatment, not by the treatment given them by the general practitioner, who, with the aid of the misinterpreted x-ray picture, is so frequently sued, but by the outcome of the cases treated by a competent surgeon, cases that the latter treats in his private practice. As I look back on my cases of fracture, I must say that the majority of them have terminated in a very satisfactory manner. I do not mean to say that some of the patients have not had deformities, but the individuals have been able to go about and to use the extremity. The result has been satisfactory and would more than counterbalance the risk of an open operation. A Philadelphia surgeon many years ago remarked that antiseptic surgery is not cock-sure surgery even in the hands of the best men.. This is yet true. If I had a fracture of the patella, I certainly would not have my knee-joint opened and the fracture sewn up. I would take my chances the other way and believe that I would come out pretty well. King Edward's patella was treated bloodlessly and wisely.

Infant Mortality.—The young of all animals are more susceptible than the adult to the influence of environment and the approach of death. Owing to the long duration of the period of infancy in human beings as compared to that of the lower animals in general, it is obvious that the opportunity of environment to react on our development is enormously increased over that afforded in the case of other living beings. Hence it is inevitable that even under the most favorable circumstances, the deaths of infants will furnish a large contribution to the bills of mortality. But when it can be said of a city, as it can to-day be truly said of Boston, that, "the new-born child within its gates has less chance than a man of 90 of living for a week, less chance of living through a year than a man of four-score," there surely is connoted a prevalence in that city of those causes and conditions which in the long run determine a degeneration of the race. Poverty alone is not responsible. In many poor communities the infant mortality is low. Housing and external environment alone do not produce this evil, for under some of the worst external conditions in the world it is absent. The chief cause of infant mortality is to be found in that component factor of its environment which is more potent than any other of influencing the future development and determining the fate of the new-born babe.—J. M. Connolly in *Hygiene and Physical Education.*

treatment of a fracture has become a personal and important one to many surgeons. Last year the largest liability accident insurance company in this country showed that out of 100 suits for damages, 75 per cent. were brought on account of surgical conditions, and the remaining 25 per cent. on account of medical conditions. Of the damage suits brought against surgeons, 75 per cent. were on account of deformity following the treatment of a fracture. Only a year ago Mr. Lynn Thomas, a British surgeon, was sued in a case of fracture of the surgical neck of the humerus. The case passed from one court to another and at the end of a year the damages allowed were over $20,000. As Dr. Ochsner said, the statistics in our large hospitals show that, as a rule, fractures are treated by young men who do not receive any instruction from the surgeons but from previous house officers. In the large New York hospitals, when a fracture of the neck of the femur comes in, for instance, the patient has to stay for twenty-four or forty-eight hours, when he is sent to other hospitals because the hospital wants to get rid of these cases. The result is that these patients come in with much shortening and go out with considerably more shortening.

Dr. J. B. Murphy, Chicago: That the results from the treatment of fractures in the large hospitals are not satisfactory is an admitted fact. This is due to two elements; first, the neglect of these cases by the attending surgeon; and second, the imperfect understanding of the conditions of the individual fracture by the medical profession. Bad results in their order of frequency are, in Colles', in Potts', in every fracture of the neck of the femur, in fractures of the patella and in those of the olecranon. Take, for instance, Colles' fracture. The bad results seen here are not due to the fact that the bones cannot be kept in position, but to the fact that the bones are not properly replaced in over 95 per cent. of the cases. The reduction of a Colles' fracture involves a special technic, one different from that of the reduction of any of the other common fractures of the body. The fracture occurs in a certain line extending from in front upward and backward. The lower fragment is displaced upward on the posterior surface of the radius. The *method of reduction is simple, easy,* and uniformly neglected. First, place the thumb of the right hand on the distal fragment and put the thumb of the left hand on the proximal fragment, increasing the deformity by pressing both thumbs forward to unlock the fragments. As soon as they are unlocked, place the end of the left thumb on the nail of the right thumb and press the lower fragment forcibly downward, then reverse the pressure by flexing the patient's hand forcibly forward, and the fragments will fall into position easily and will remain there. Afterward, all that is needed is to put on the simplest kind of plaster of Paris support over the wrist. If the deformity does not remain reduced, it is because it has not been reduced properly. If the pain is severe for from twelve to twenty-four hours it indicates that the reduction is not complete.

The types that must come to operation to get good results are, first, fractures of the neck of the femur, not in old people past sixty, but in younger people who do have fractures of the neck of the femur by direct or indirect violence. It is only by inspection and careful analysis of cases and by fixing these fragments that one can reduce the deformity and keep the fragments in apposition. In fractures of the neck of the femur close to the head a very important principle is involved; that is, the presence in the proximal fragment of any osteogenetic cells for the reproduction of the bone from the head side.

The principle of the apparatus exhibited by Dr. Wills and the one by Dr. Freeman, by which one can do the work without coming in contact with the traumatized area, thus avoiding exposure to infection, is an important one and should be utilized on all occasions when the fragments can be apposed satisfactorily. One should not operate immediately after the fracture, because the tissues are then in a condition of least resistance. Operation should be postponed until an effort at regeneration of the traumatized tissues has taken place. One can do an enormous amount of work on the fifth, tenth or fifteenth day without danger of infection that could not be done on the first or second day after the accident. The lymph spaces have become cofferdammed and the new capillaries are developed to the greatest resistance against microbic invasion.

Dr. Charles A. Powers, Denver: I believe that open operation in simple fracture will be performed more often than it has in the past, but also that open operation in simple fractures will be the exception rather than the rule. As I look back over my own results in simple fractures treated without operation I feel that they have generally been satisfactory. I do *not think the results in these fractures, when carefully treated* by established methods, are notoriously bad. I am entirely in accord with Dr. Scudder. He expressed my position clearly and thoughtfully. Further, Dr. Ochsner is right when he says that on our routine hospital work we are too prone to leave the treatment of these important cases to interns of but little experience. If we pay proper attention to suitable nonoperative management we will have fewer cases which demand operation.

Dr. W. L. Estes, South Bethlehem, Pa.: While I believe that in this matter we should be rather conservative, there are some fractures that, one might say, must almost invariably be treated by the open method. I have come to the conclusion as the result of considerable experience that there are certain localities where certain fractures require an open operation. The first of these is fracture in almost any part of the shaft of the tibia, when the fracture is very oblique, with no shoulder to hold it, making it impossible to keep the fragments in position by any ordinary mechanical means. My observation of the result of other surgeons' work and my own experience has taught me that no splint or mechanical contrivance will accurately reduce and retain these fractures in proper apposition without the open method. In this day of the *x*-ray not only must the usefulness of the limb be thought of, but also the cosmetic effect. The public demands that we treat these fractures of the extremity in a way to retain the appearance as well as the usefulness of the limb. To do this it is necessary that we perform an operation when the condition and surroundings of the patient are favorable. In regard to methods of fixing the fragments in an open operation, it does *not matter so much what apparatus* we use so long as we do the work under proper asepsis. Either a clamp, or a screw, or a splint, applied directly to the bone, will answer the purpose. I am opposed to any method, however, which will not enable one to see whether the fragments are in apposition. One may think that he has the bones in apposition, and put on a splint, but when the *x*-ray is used he finds, much to his surprise, that there is malposition. Hence the importance of an incision down to the seat of fracture, complete exposure and accurate coaptation of the fragments under the eye and then firm fixation.

Another fracture which should be treated by the open method is fracture of the junction of the upper and middle thirds of the humerus, where the musculospiral nerve is so apt to be injured. The danger of the injury is in proportion to the violence that has been done by the ends of the fractured bone. The nerve may not give any evidence of injury immediately, but within two weeks there may be paralysis. The explanation of this late development is that one end of the displaced fragments may press against the nerve, and the developing callus does the rest. Another fracture which requires the open method is that of the inferior maxilla. These fractures are nearly always compound, and they require drainage as *well as accurate replacement and fixation, hence* the open method should be employed.

Dr. Rudolph Matas, New Orleans: It does not follow that all fractures are better treated by operative methods or that good results cannot be obtained by bloodless manipulations. Surely practitioners of surgery cannot accept the *x*-ray standards of bone setting as the sole and absolute criteria of successful treatment. We who teach surgery, while fully recognizing the great advances brought about in the treatment of fractures by open methods of reduction and fixation, must remain in sympathy with the view which holds that when a broken bone is set without any visible deformity and is followed by no abnormal disability, such a result must be regarded as a good result—even though the *x*-ray may show some displacement or imperfect apposition of the fragments. Judging by this simple standard, there is no question that a vast number, the majority, of fractures of the extremities can be successfully treated without operation. It is only right that the art of bone-setting by bloodless manipulation should be cultivated and encouraged more than ever as an essential part of the surgeon's training. On the other hand, when it is evident that reduction is impossible and that deformity with impaired function is unavoidable in any given case of fracture, there should be no hesitation in resorting at once to the open treatment, provided all other conditions, including the operator's training, are favorable to the procedure. In conclusion, I would ask: What are we to do in operative cases in which a perfect result is obtained, a real cabinet-maker's approximation, and yet in which callus totally fails and there is no ossification? This failure of repair which I have observed in operative cases, and especially after wiring, creates a serious problem that is not solved by further operation, additional traumatism, nor by Bier's blood injections at the seat of fracture. In these cases, what will accomplish the desired result? Will orthopedic "walking" braces which do not constrict the limb, and which permit the systematic application of massage combined with hot air hyperemia? It is the walking splint, however, that is the most effective, and, in view of the not infrequent failure of union after operation, I am glad to commend the ambulant orthopedic splint as a reliable treatment for this deplorable condition.

DR. DEFOREST WILLARD, Philadelphia: Surgeons differ widely in their advocacy of operative or non-operative treatment in fractures. Dr. Martin called attention to the question of diagnosis. There is at present no reason for failing to know whether we have succeeded in the replacement of fracture. The Roentgen ray will tell us all this. It is not only necessary to reduce the fracture, but to keep it reduced. There are certainly a large number of simple fractures that do not require operative treatment, but there are cases in which it is necessary to resort to operation, *i. e.*, those in which reduction and retention are impossible and especially delayed union, non-union, compound fractures and comminuted fractures. Fracture patients often come to the hospital and they are not seen by the surgeon at all. They are treated by the house officers; they are sometimes treated carelessly, and a bad result is sure to follow. We all have reason to know the annoyance that comes from a malpractice suit, and the Roentgen ray is adding to our troubles because while many cases are functionally perfect, they are not anatomically perfect and a jury is readily influenced. The Roentgenogram is only a shadow and not the thing itself. Look at your own shadow as you are walking on the pavement. It is not at all like yourself. In comminuted and ununited fractures I have tried wires, staples, screws, plates, clamps and everything else. We all know how often we are obliged afterward to cut down and remove these substances; therefore, whenever it is possible, I use chromicized catgut rather than any other foreign body. Magnuson has shown that metal-headed ivory screws that can be cut off on a level with the periosteum can be inserted into the bone and soon become a part of it. I believe that the use of such ivory screws will revolutionize the treatment of ununited fractures.

DR. CHARLES E. THOMPSON, Scranton, Pa.: Dr. Martin said that the fracture might slip, and stopped there. We must not be discouraged because our fractures slip. We must reduce them again, until we retain them in proper position. Dr. Ochsner spoke about the bad results obtained in the treatment of fractures in the general hospitals, but nothing has been said about the bad results obtained out in the hills by the general practitioners, nor has anything been said about the cause of these bad results. I hope college professors will tell us why these general practitioners cannot be taught to reduce fractures. Of all the delusions and snares, perpetrated on an unsuspecting profession, Buck's extension apparatus is the worst. Dr. Scudder told us something about the reduction of fractures but did not go far enough. If a fracture, say of the femur, becomes displaced after reduction, in my experience the most common cause of displacement is a muscular spasm occurring during sleep. If the fragments cannot be retained in a direct line I have frequently succeeded in retaining them at an angle, letting that deformity prevail until some union has taken place, when the bone can be very easily set in a straight line. The difficulty of having plaster set and stay set can be obviated by using crinolin sized in starch. If the bone cannot be held in proper position, a slight amount of lateral pressure, such as placing a wedge of cotton or gauze on the inside of the plaster on the third or fourth day after reduction, will hold the bones in perfect apposition. If this method fails, I have in a few cases succeeded by putting on a counter-extension transversely, and holding up the bone in the same direction, where there was a great tendency to displacement in an upward or downward direction. In another case, a compound fracture of the tibia having failed to be retained in position by ordinary methods, I inserted an osteotome, and securing a slight leverage between the ends of the bones, held then in place and had an assistant hold the osteotome in position; I then incorporated osteotome and assistant's hands in the cast. The assistant's hand was removed after the cast was hard, after the patient was put to bed; the osteotome was removed the next day. The result was ideal.

DR. ROBERT F. WEIR, New York City: We have been told, and correctly so, that fractures are hard things to treat. They tell us also that in the hospitals they are badly treated because the juvenile intern does the treating. That is true, but there is another reason which has not been mentioned why there are so many cases of malpractice. Malpractice suits are brought against the physicians who are only occasionally surgeons. If surgeons say that it is hard to treat a fracture, how can the ordinary practitioner expect to succeed in doing so? He does not attempt to do an abdominal operation, but he does not stop at treating a fracture, which we all know is a very hard thing to manage successfully. The majority of cases should be judged not by hospital treatment, not by the treatment given them by the general practitioner, who, with the aid of the misinterpreted *x*-ray picture, is so frequently sued, but by the outcome of the cases treated by a competent surgeon, cases that the latter treats in his private practice. As I look back on my cases of fracture, I must say that the majority of them have terminated in a very satisfactory manner. I do not mean to say that some of the patients have not had deformities, but the individuals have been able to go about and to use the extremity. The result has been satisfactory and would more than counterbalance the risk of an open operation. A Philadelphia surgeon many years ago remarked that antiseptic surgery is not cock-sure surgery even in the hands of the best men.. This is yet true. If I had a fracture of the patella, I certainly would not have my knee-joint opened and the fracture sewn up. I would take my chances the other way and believe that I would come out pretty well. King Edward's patella was treated bloodlessly and wisely.

Infant Mortality—The young of all animals are more susceptible than the adult to the influence of environment and the approach of death. Owing to the long duration of the period of infancy in human beings as compared to that of the lower animals in general, it is obvious that the opportunity of environment to react on our development is enormously increased over that afforded in the case of other living beings. Hence it is inevitable that even under the most favorable circumstances, the deaths of infants will furnish a large contribution to the bills of mortality. But when it can be said of a city, as it can to-day be truly said of Boston, that, "the new-born child within its gates has less chance than a man of 90 of living for a week, less chance of living through a year than a man of four-score," there surely is connoted a prevalence in that city of those causes and conditions which in the long run determine a degeneration of the race. Poverty alone is not responsible. In many poor communities the infant mortality is low. Housing and external environment alone do not produce this evil, for under some of the worst external conditions in the world it is absent. The chief cause of infant mortality is to be found in that component factor of its environment which is more potent than any other of influencing the future development and determining the fate of the new-born babe.—J. M. Connolly in *Hygiene and Physical Education.*

BRAIN TUMOR*

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During the past year I have had the opportunity to observe a number of cases of brain tumor, certain features of which seem to me worthy of discussion. Especially noteworthy are the importance of gradually developing hemiplegia, the slow appearance of papilledema in certain cases of glioma, and later its remarkably rapid development, the resemblance of tumor of the pons to tumor of the Gasserian ganglion, and the signs of tumor of the occipital lobe, especially the dissociation of the color-sense in tumor of the left occipital lobe.

DIAGNOSIS OF BRAIN TUMOR

The credit for pointing out that progressive hemiplegia without other symptoms is diagnostic of brain tumor seems to belong to R. T. Williamson. In his paper[1] he states that it is well known that when hemiplegia is produced by a tumor in the motor cortex or white matter of one cerebral hemisphere the onset of the paralysis is usually very gradual. Day by day, and week by week, the loss of power becomes more and more marked. It may be weeks, or a few months, before the paralysis is complete. It is not so well known, he states, that progressive hemiplegia of the nature just described is an almost certain sign of brain tumor, even in the absence of optic neuritis, headache, and vomiting (provided there are no indications of cerebral abscess). Williamson reports three cases of brain tumor in which the hemiplegia developed very gradually, and in all three papilledema was absent. In the first case headache and vomiting were present; in the second case these two symptoms were absent for a long period; in the third case they were absent altogether. He refers to a similar case observed by him ten years previously. He expresses his views very clearly: "Provided there are no indications of cerebral abscess, progressive hemiplegia, or hemiplegia of gradual onset, in which weeks or a few months elapse before the paralysis is complete, may be regarded as strong evidence of cerebral tumor, even when optic neuritis is absent, or when optic neuritis, headache, and vomiting are all absent."

I can not refrain from stating that Williamson expresses his opinion somewhat too forcibly. A gradually developing hemiplegia I have seen as a symptom of polioencephalitis. A child recently under my care presented symptoms suggestive of brain tumor. An operation was performed at my request by Dr. Frazier and a portion of the cortex was removed, as at the operation it resembled tumor tissue. It proved to be the seat of polioencephalitis. Six weeks before the child came under my observation the right lower limb began to get weak, and one week later the right upper limb began to grow weak. The hemiparesis became gradually worse. The case I shall probably report in detail, and merely wish to call attention here to the fact that polioencephalitis as well as tumor may cause a gradually developing hemiplegia. The latter lesion is, of course, of much more frequent occurrence than the former.

Souques[2] also has recently written on gradually developing hemiplegia as a sign of tumor.

Cortical meningitis may cause a gradually developing hemiplegia, and the meningitis may be purulent or of other type. I have recently seen a case with Dr. W. G. Shields, Jr., and Dr. J. A. Hearst in which paralysis of the left lower limb, almost confined to the part below the knee, developed one day, and paralysis of the left upper limb and left side of the face did not appear until two days later. An operation by Dr. Edward Martin revealed a purulent meningitis, apparently confined to the region of the center for the lower limb. The paralysis in such a case, however, is likely to be of more rapid development than when caused by tumor.

The gradual development of hemiplegia was present in several of the cases mentioned in this paper. It was especially striking in Case 1, and, indeed, because of it I made the diagnosis of a probable tumor of the brain at my first examination of the patient. A hemiplegia had developed very gradually during a period of about six weeks, and there was at no time a sudden increase in the paralysis. Even within three days of death no changes in the eyegrounds were observed in an examination by Dr. de Schweinitz. A large tumor was found in the optic thalamus and internal capsule, and had undergone cystic degeneration. It had evidently caused no increase of intracranial pressure. Cases such as this and Cases 2 and 3 indicate that the production of papilledema by toxic substances alone in brain tumor is questionable. In all these cases the tumor was large, and yet papilledema did not occur, in two cases and developed only late in the other, probably because there was no great increase of intracranial pressure.

In Case 2 a gradually developing hemiplegia was observed, and yet the tumor did not extend to the internal capsule. Vascular changes in the internal capsule at a distance from the tumor caused the hemiplegia, as determined by the examination of certain sections given by me to Dr. Byrnes for this purpose. The importance of this finding is in the demonstration that a gradually developing hemiplegia in brain tumor does not imply necessarily that the tumor has extended to the internal capsule. The examination of the brain with the clinical notes in mind was a surprise to me, as to the naked eye no implication of the internal capsule could be detected, and the tumor evidently did not extend so far forward from the occipital lobe. Dr. Byrnes[3] has referred to these findings in another paper.

A gradually developing hemiplegia was observed also in Case 4, but the patient was not seen by me until the symptoms were far advanced, and it was uncertain how much reliance could be placed on the statements.

In a case seen by me in consultation with Dr. Babcock a diagnosis of brachial plexus palsy had been made at first, because the palsy seemed at that time to be confined to the upper limb. At the time I saw the patient the lower limb had also become affected, and other symptoms made the diagnosis of tumor a probable one. A cortical tumor was found by Dr. Babcock at operation.

I have in two instances known thrombosis of the middle cerebral artery to cause a gradual increase in the symptoms as seen in tumor, but when thrombosis is the cause the development of the symptoms is likely to be somewhat different. A partial palsy, or other symptoms indicative of brain lesion, may develop within a

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Williamson, R. T.: Practitioner, July-December, 1904, p. 321.

[2] Souques: Rev. neurol., 1908, p. 1250.

[3] Byrnes: Jour. Nerv. and Ment. Dis., March, 1909.

short time, and then the symptom-complex may be arrested for some time, possibly several weeks, until the thrombus extends to one or more branches of the vessel previously affected, when additional palsy appears, but usually more rapidly than is seen when a tumor is the cause of the weakness. Occasionally a tumor may produce a very rapid palsy, as when a hemorrhage implicates the growth or when a glioma has destroyed many of the axis cylinders within the tumor but has left enough for the discharge of function, and suddenly, by edema or other cause, the impaired fibers become insufficient.

A peculiar symptom, present in Case 3, I have observed in two other cases of brain tumor, viz., intense hunger. Mrs. Y was hungry all the time and had a "most vigorous appetite," in the words of her friends. In another case a note was made that the patient had a voracious appetite. The intense hunger is not confined to tumor cases. The character of the tumor seems to have no bearing in the production of this symptom, nor does its location seem to have much importance.

Mrs. Y. (Case 3) also complained of pain and throbbing extending down the neck to the shoulders. Pain from tumor of the brain may be felt in the neck. This neck pain was very pronounced in a case reported by me some years ago, and in that case the tumor was at the foramen magnum and extended downward on the cord the distance of several cervical segments. Why pain should be felt in the neck from a tumor of the brain is not clearly understood, any more than is the related symptom of stiffness of the neck observed sometimes in cases of brain tumor, as in Cases 1, 2 and 4, in which rigidity of the neck muscles was caused by a tumor of the optic thalamus, by a tumor of the occipital lobe, and by a tumor of the region posterior to the optic thalamus. So far as I am able to determine, pain radiating down the neck and stiffness of the neck are not of localizing value.

The slow development of papilledema in glioma is worthy of comment. It may be absent throughout the disease, even when the tumor is large, as in Case 2, in which almost the entire occipital lobe of one side was occupied by a tumor, or in Case 3, in which it developed late, and after the tumor had attained a very large size. The latter case demonstrated another interesting phenomenon, viz., the occasionally extraordinarily rapid development of papilledema in brain tumor, even though it may be late in appearing. This patient was found on March 21 to have normal eyegrounds; on April 6 Dr. Thorington noticed for the first time that the nasal side of each disc had begun to be elevated and to be indistinct in outline, and that the retinal veins were enlarging. On April 13 he found the swelling of the discs to amount to 7 D., and on April 18 to 10 D. The case shows how important constant observation of the eyegrounds may be when the symptoms of brain tumor are present, and illustrates the danger of delaying decompression when the signs of increased intracranial pressure appear. It is often impossible to make the patient realize that the sight may be put in jeopardy within a few days, and he may neglect to visit the ophthalmologist, notwithstanding that every effort may have been made to convince him of the danger of this neglect.

Paton[4] has studied the records of 252 cases of brain tumor occurring at the National Hospital between the years 1899 and 1905. He finds that tumors of the deeper portions of the cerebral hemispheres and of the pons are more likely to occur without papilledema. In the subcortical cases the development of papilledema almost invariably corresponded with invasion of the cortex or with marked compression or invasion of the lateral ventricle. The development of papilledema in pontile tumors almost invariably implied the invasion of the cerebellum.

In the discussion of this paper Gunn[4] states that pontile tumors rarely cause papilledema because death occurs early.

The statements quoted from the remarks of Paton conform with the results of my own observations in great measure, but the explanation offered by Gunn for the infrequency of papilledema in cases of pontile tumor is inadequate. I have repeatedly seen tumors causing enormous enlargement of the pons before death occurred, and in Case 3 the tumor of the pons doubtless was enormous before papilledema occurred. The cerebellum was not implicated, and, notwithstanding Paton's statement, papilledema became intense. Likewise, in Case 2, the tumor occupied almost the whole of the occipital lobe, but caused no papilledema, even though it extended to the cortex. Rules are useful, but almost all have exceptions, and what is true of one series of cases is not true of all.

Some years ago Schmidt[5] advanced the view that an increase of the symptoms by lying on a certain side of the body was indicative of the side of the tumor. The sign has seemed to me exceedingly unreliable, and I have been observant of it since the first appearance of Schmidt's paper, but have never been able to obtain any satisfaction from it, and have come to entirely disregard it from a diagnostic point of view. Mrs. Y (Case 3), for example, was obliged to lie on the right side, and when she turned on the left side she complained of feeling sick and as if "everything were going from her." Turning the head to the left while lying down produced nausea. In this case the tumor implicated the entire pons.

In Case 5 the diagnosis had to be made between tumor beginning in the Gasserian ganglion and tumor of the pons. The patient had headache, vomiting, vertigo when headache was present, and diplopia. In my examination I found that he had considerable ataxia, slight nystagmus in looking far to either side, slight weakness of the left facial distribution, some impairment of hearing in the left ear, and marked paralysis of the left trigeminal nerve (atrophy of the temporal and masseter muscles with diminution but not complete loss of sensation in the distribution of this nerve) and paresis of the left side of the soft palate.

One might readily diagnose a tumor of the pons with these symptoms, but the examination also showed that the voluntary power of the upper and lower limbs on each side, as well as the tendon reflexes of these limbs, was normal. The ocular examination revealed beginning papilledema and paresis of the left external rectus. The deafness of the left ear was attributed to catarrh, as no signs of nerve deafness were detected.

Probably the most striking sign was the pronounced implication of the left trigeminal nerve, so intense as to cause a distinct flattening of the face over the position of the muscles supplied by this nerve; and this would seem to indicate a long-standing implication of the fifth nerve. A tumor of the Gasserian ganglion would explain this sign, as well as the escape of the motor tracts for the lower limbs. The left sixth nerve might easily be caught in its passage through the cranium. Pressure of the tumor on the pons—i. e., on the middle cerebellar peduncle—might explain the nystagmus on lateral movement and the ataxia. A tumor in this position might cause some weakness of the left facial nerve and beginning deafness. I am inclined to think that central deafness at first may be indistinguishable from deafness due to middle-ear trouble, and that we should be careful how we diagnose when deafness is in an early stage. The weakness of the left soft palate was difficult to explain by the supposition of a tumor beginning in the Gasserian ganglion and extending downward sufficiently to implicate the glossopharyngeal nerve, but no less difficult appeared the diagnosis of tumor within the substance of the pons sufficiently large to implicate the fifth, sixth, seventh, eighth, and possibly the ninth and tenth nerves, and yet cause no weakness of the limbs or change in the tendon reflexes. The diagnosis was extremely difficult and could not be made with certainty, and, in the hope that the tumor might be found in the region of the Gasserian ganglion, although pain in the face had not been severe, I requested Dr. Frazier to operate, but the tumor was not detected at the operation. It is indeed remarkable that a tumor so large as that found in this case could occupy a large portion of the pons and yet produce no weakness of the limbs or change of reflexes that could be detected in careful examination directed toward the finding of either of these signs. The explanation is that the growth was a glioma, and, as so often occurs in tumors of this variety, many nerve fibers passed *through the tumor without losing their axis cylinders*, even though they may have lost their medullary sheaths. Pain in the distribution of the fifth nerve would be more likely to occur in tumor of the Gasserian ganglion.

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[4] Paton and Gunn: Tr. Ophth. Soc. U. Kingdom, 1907-1908, xxviii, p. 112.

[5] Schmidt: Wien. klin. Wchnschr., 1898, No. 51.

The case shows clearly that the diagnosis between a tumor upon the pons and one within the pons, if the latter be a glioma, my be extremely difficult or even impossible. A case presenting the same difficulty I studied with Dr. W. A. Bliss in St. Louis somewhat over a year ago.

In my chapter on tumors of the brain, in the book edited by Dr. Posey and myself,[6] I give the symptoms that have been observed in tumors of the occipital lobe. Visual hallucinations are mentioned, and several references are given to cases in which these phenomena occurred. The hallucinations seem to occur in the blind fields, and this statement is also made by Oppenheim.[7] The appearance of homonymous lateral hemianopsia, followed by gradually developing hemiplegia and loss of sensation, all the symptoms being on the same side, is suggestive of tumor, especially if the hemianopsia be accompanied by visual hallucinations. The latter may be absent throughout the course of the disease; thus Claude and Rose[8] have recently reported two cases of tumor of the occipital lobe in which visual hallucinations were not observed. They assume that such hallucinations are caused by irritation of the calcarine cortex, and were absent in their cases because the tumors were in the white matter of the occipital lobe. This seems to be assuming too much, as we have sufficient evidence to show that a lesion need not be confined to, or even be located within, the calcarine cortex to produce visual hallucinations, and this statement is justified by Case 6. I have emphasized this fact also in my chapter referred to above. Claude and Rose refer to the fact that the hemianopsia in tumor of the occipital lobe is seldom complete from the beginning, but, after being partial for a time, may rapidly become complete, so as to suggest a thrombotic lesion. In one of their cases an examination made Jan. 9, 1907, revealed a left homonymous lateral quadrantanopsia. Another examination, made Feb. 24, 1907, showed that the hemianopsia had become complete.

All writers who refer to visual hallucinations in cases of brain tumor, so far as I have been able to study the literature on the subject, speak of the hallucinations as occurring on the side opposite to the tumor. This generally accepted opinion led me to a diagnosis of the wrong occipital lobe in a case seen with Dr. William H. Teller (Case 6). The patient stated positively that he had frequent attacks, in which wriggling bright lights, beginning always in the right field, gradually passed to the center of the field, and disappeared in the left field. These phenomena were accompanied by dimness of vision, beginning also in the right field and disappearing in the left field. Since optic neuritis had occurred he saw black objects looking like snakes, rosettes, and forms of leaves in front of the eyes; occasionally he saw the heads of persons. Believing from these phenomena that the tumor was probably on the side opposite the fields in which the hallucinations first appeared, and therefore in the left occipital lobe, I suggested to Dr. Teller that it would be well to expose the left occipital lobe. The tumor, however, was in the right occipital lobe. It would seem from this case that *visual hallucinations may occur in the field on the same* side as the tumor, or at least begin in this field. The patient was intelligent, his mind was active, and his statements regarding his visual phenomena were reliable.

The only important signs of tumor in this case were papilledema of high grade and visual hallucinations. Hemianopsia was not present, and the absence of this sign is explained by the examination after death, as the tumor does not appear to have implicated the visual fibers. It seems almost impossible to have made any other localization than that made in this case, unless we can judge from one case that visual subjective phenomena may occur in the field on the same side as the tumor.

Another case seen with Dr. J. T. Rugh more recently lends support to this view. A woman with signs of brain tumor saw flowers and "red, green and bright colors," and dogs, to her right, and on one occasion she saw bird-cages and an open trunk, but it is not certain where she saw these; the flowers and dogs she was sure she saw to the right. Spontaneous pain in the right parieto-occipital region and tenderness to percussion here, normal right patellar reflex and exaggerated left patellar reflex, and some impairment of ability to recognize objects with the left hand, indicated that the lesion was on the right side. The tumor was not found at operation, but the pressure of the right cerebral hemisphere through the opening was enormous.

Lewandowsky[9] refers to the amnesic color-blindness of Wildbrand. This seems to be a sensory aphasia confined to the names of colors. Patients presenting this sign are unable to name colors shown them and to pick out colors named to them. Lewandowsky is uncertain whether this symptom occurs in a pure form, and is inclined to think that the symptom-complex belongs to his dissociation of the color-sense. His patient had sensory aphasia, was word blind and word deaf, but after these symptoms had almost disappeared the peculiar color-symptoms were detected. He had homonymous right lateral hemianopsia. Like my patient referred to below, the man was not mind-blind. My patient had no difficulty in recognizing and avoiding objects. Lewandowsky's patient was unable to name the colors of objects shown to him or to find colors named to him. He could not name the color of an orange or a leaf (my patient could not name the color of blood or of snow). He also could not find the proper colors of objects from samples shown him, as my patient also could not. The disturbance evidently did not depend merely on a speech defect. His patient also did not observe anything peculiar in pictures colored unlike objects occurring in Nature. *He was able to match colors.*

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[6] Posey and Spiller: The Eye and Nervous System, 387.

[7] Oppenheim: Die Geschwülste des Gehirns, ed. 2, p. 120.

[8] Claude and Rose: First Internat. Cong. of Psychiat., Neurol., etc., Amsterdam, Sept. 2-7, 1907.

[9] Lewandowsky: First Internat. Cong. Psychiat., Neurol., etc., Amsterdam, 1907; Monatsschr. f. Psychiat. u. Neurol., 1908, xxiii, 488.

Lewandowsky believed that a lesion had destroyed the color-center of the left hemisphere, but that the color-center of the right hemisphere was preserved. The association of the color-sense not only of the left center but also of the right center was through the left color center, and, this being destroyed, association of color with form was impossible. Whether the left occipital lobe is the more important in every person is not determined, but in all reported cases of cerebral disturbance of the color sense the left hemisphere has been affected.

It would seem that in this dissociation of the color-sense described by Lewandowsky[9] we have a new and important sign of lesion of the left occipital lobe. It is possible that it might occur without other sign of lesion of the occipital lobe, but it is probable that we shall always find hemiamblyopia, as in my case, or even hemianopsia.

A patient in the service of Dr. John H. Musser, whom I had the opportunity to examine, presented this symptom of color disturbance, which promises to be of value in diagnosing lesions of the left occipital lobe. It is not my intention to enter into a full description of the case in this place. He had right lateral homonymous hemiamblyopia, intense word-blindness, slight word-deafness, and some amnesic aphasia, i. e., he could not always find the word he desired in speaking. As there was a possibility of tumor, although the lesion was believed to be thrombosis, I recommended exposure of the left occipital lobe with the angular gyrus as a center, and softening of the occipital lobe was found by Dr. Frazier and the diagnosis confirmed by the examination of a small piece of excised tissue. An examination made by me before the operation gave the following results:

The patient could name most objects shown to him, such as a watch, knife, key, handkerchief, but sometimes made mistakes. When shown the picture of a dog colored deep blue or the picture of a donkey colored deep green he found nothing peculiar in these colors, and said when asked that he had often seen a dog or a donkey of the colors mentioned. He was entirely unable to give the name of any color shown him, and when the correct name of the color was mentioned among others he did not recognize it. He could match colors without the slightest hesitation. He was entirely unable to find a color mentioned to him when a variety of colors was placed before him. He was unable to name the color of any object shown to him, as that of a leaf. He answered, "I know what all that is, but I can not remember." When asked what a leaf was he said that he did not know.

A hasty examination would have led to the conclusion that the patient was color-blind, as he did not remember the color of any object, did not name the colors shown him, did not see any impropriety in the coloring of a dog blue or a donkey green, and yet the preservation of the color-sense was shown by his ability to match colors without the slightest hesitation. He had merely lost the ability to associate color with form; he recognized the form of most familiar objects and matched colors, but was entirely unable to put form and color together. He had what Lewandowsky has described as *Abspaltung des Farbensinnes,* which might be translated as dissociation of the color-sense.

It is usually difficult or impossible to form an opinion of the character of the tumor from the symptoms. As regards the possibility of this, Oppenheim[10] says:

> The symptoms are not essentially modified by the character of the growth, especially when the syphilitic process is left out of consideration. The same symptom-complex may be produced by glioma, sarcoma, solitary tubercle, and other tumors. The glioma sometimes is characterized by apoplectiform attacks, which may occur repeatedly and be associated with a rise of temperature. The vascularization may cause much variation in the intensity of the symptoms. The glioma has a slow growth, excepting the acute attacks caused by hemorrhage and swelling. Remissions are not uncommon.

Ludwig Bruns[11] speaks of the uncertainty in diagnosing the character of the tumor from the symptoms, but he thinks that very acute commencement of symptoms, possibly after slight trauma, in a person previously apparently entirely healthy, is suggestive of glioma. Rapid variation in the intensity of the symptoms and sudden increase in the symptoms are also common in glioma, but occur in other forms of tumor. The diagnosis between glioma and sarcoma especially is difficult.

There is still another way by which we may draw conclusions regarding the presence of glioma: The general symptoms of brain tumor, associated with the signs of a widespread lesion as of the greater part of the pons, with the escape of important fibers situated within the lesion, as those of the pyramidal tract, should be indicative of glioma. In no other form of tumor is the escape of fibers within the tumor so likely to occur. In two of the cases reported in this paper the justification for this view is clearly presented (Cases 3 and 5).

REPORTS OF CASES

Case 1.—*Patient.*—D. P. (Lab. No. 467) was referred to me Jan. 11, 1909, by Dr. S. W. Gadd. He had been well until six weeks previously. He denied venereal disease, and his wife had not had any miscarriages. A left hemiplegia had developed gradually, there had not been at any time a sudden loss of function, for example he was weaker at the time I saw him than he had been two weeks previously. He had not taken alcohol for twelve months, previous to this time he drank occasionally. He had not had headache, and gave no history of trauma. During the five days previous to his visit to me he had vomited almost every day. He had not had convulsions.

First General Examination.—The notes concerning his condition at my first examination are as follows: "Mentality is good, and he talks fluently. The sight has failed during the past two years. He has slight weakness in the lower left side of face, not in the upper part of face. The tongue is protruded in the median line. The left upper and lower limbs are weak, but he still has considerable power in these limbs. The biceps and triceps tendon reflexes are a little exaggerated on the left side. The patellar reflexes are prompt, and the left is distinctly exaggerated. Ankle clonus is present on the left side, but not on the right side. There is no hemianopsia.

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[10] Oppenheim: Die Geschwülste des Gehirns, ed. 2, p. 221.

[11] Bruns, Ludwig: Die Geschwülste des Nervensystems, ed. 2, p. 260.

Sensations of touch and pain are less acute on the whole left side; in face, upper and lower limbs. He has marked tremor of the right hand. He drags the left foot when walking. He has no hemianopsia."

Second General Examination.—The change that occurred in this patient's condition between January 11 and February 6 was very great. An examination made by me on the latter date gave the following results: "The man is in stupor; he mutters constantly, and makes irrelevant remarks. Hiccough is pronounced. He lies with his head turned to the right and the neck is stiff. The palsy in the lower part of the left side of the face is distinct. The stupor prevents any careful testing of the power of the upper part of the face. It is impossible to get him to protrude the tongue beyond the lips, or to make him move the eyeballs on command. The reaction to light is present in each eye, but feeble. He moves the right upper limb freely. The left upper limb is completely paralyzed, is flaccid, and falls lifeless when elevated. The right upper limb is somewhat spastic. The biceps and triceps tendon reflexes are about normal on each side, although they may be a little prompter on the left side. He seems to feel pin-prick in the left hand. The left lower limb is completely paralyzed, and falls lifeless when elevated. The patellar reflex is about normal on each side. Ankle clonus is not obtained on either side, and the Achilles reflex is weak on the left side. The Babinski reflex is uncertain on each side."

Ocular Examination.—The notes dictated by Dr. de Schweinitz regarding the ocular condition are as follows: "Pupils dilate thoroughly with homatropin. Right disc shows no swelling or edema, outer half has atrophic pallor. No definite signs of previous neuritis. Central vessels are small. The right disc is similar to the left, but of better color. In both maculæ patches of retinochorioiditis."

The man's condition became gradually worse, and he died February 10, at 6 a. m., his temperature, which had been irregular while he was in the hospital, rising to 106 just before death. A tumor was found in the region of the right optic thalamus.

Autopsy.—When the ventricles of the brain were opened after death no excess of fluid was found within them. The right optic thalamus fluctuated as though it contained fluid, and when a horizontal section was made through the cerebral hemisphere a cyst was found in the region of the upper part of the right optic thalamus and inner capsule. Twelve c. c. of cloudy yellow fluid were collected from this cyst. The tumor caused considerable enlargement of the right side of the brain, as shown by a horizontal section through both hemispheres at the level of the upper part of the optic thalamus. At this level it measured 4 cm. from before backwards and transversely. The cyst occupied the entire center of the tumor, leaving a narrow wall of tumor tissue. The growth was well defined from the surrounding tissue to the naked eye, and did not have an infiltrative appearance, nor did it extend into the lateral ventricle, but was separated from it by about 2 cm. of what appeared to be brain tissue.

Histologic Examination.—Under the microscope the tumor had a papillomatous appearance. It was sharply defined from the brain tissue, but extended into it by numerous nests of cells. It was very vascular and many of the vessels were surrounded by a row of cylindrical or somewhat cuboidal cells, each having a nucleus at the end nearer the vessel, the cells resembling the lining cells of the ventricle. The vessels were limited by a row of endothelial cells and separated usually by a space from the surrounding row of columnar cells. The tumor contained much detritus and some fatty granular cells. It had the appearance of adenocarcinoma, and seemed primary.

A squamous-cell carcinoma was found in the esophagus, but it is questionable whether the tumor of the brain could be considered as a metastatic growth from the tumor of the esophagus, especially as it was of a different type of carcinoma, and was solitary in the brain. The necropsy was performed by Dr. Karsner.

A very similar tumor of the brain has been described recently by Kölpin.[12] It was papillomatous and was regarded as an adenocarcinoma. It resembled glandular tissue where the tumor processes were cut transversely. It was sharply defined from the surrounding nervous tissue, but caused no distortion of the tissue about it, so that the growth of the tumor was proportional to the destruction of the nervous tissue. Masses of detritus were found in the center of the tumor, whereas the center of the tumor in my case had become cystic and the tumor had caused enlargement of the hemisphere.

Primary epithelial growths of the brain, Kölpin states, are rare findings. They arise in the ependyma of the ventricles or the lining of the chorioid plexus and have a papillomatous formation. Kölpin refers to a number of reported cases. He believed that the largest of his tumors was the primary growth and that it originated in the ventricular wall, although such a connection could not be positively detected, any more than it could be in my case.

Case 2.—*Patient.*—M. Sher. (Lab. No. 448) was admitted to the service of Dr. Edward Martin, at the University Hospital, April 23, 1908. I report the case with his permission. The patient's age was 53. The history of his illness was obtained from his wife. He was said to have been kicked by a horse in the head during the summer of 1907, but was not disabled at the time. He had not been sick during the past twenty-eight years, and he had not been a drinking man. He had been complaining occasionally for some months of headache, and his wife had noticed drowsiness, which gradually increased until he stopped work nine weeks previously. At that time he complained of severe headache in the left parietal region and seemed confused. The headache was persistent. During the four weeks previous to admission he had been in bed and was stuporous most of the time, though occasionally rational for short periods. The right arm was said to have become paralyzed four days prior to admission, and the right leg about a week before admission. The paralysis of the lower limb had developed gradually. Further investigation made the duration of the stuporous condition as given doubtful, and it seemed probable that it may have begun only a few days before he entered the hospital. When he entered the hospital he was stuporous all the time.

Ocular Examination.—Dr. Shumway made the following report: "Pupils are equal and respond to light. There is much mucopurulent discharge, obscuring the cornea. He has bilateral incipient cataracts. Retinal veins are full, but not tortuous. There is no blurring of the nerve edges, no neuritis. The eyegrounds show no gross lesions."

General Examination.—An examination by me April 25 gave the following results: "Once when he was told to show his teeth he did so, and the nasolabial fold appeared to be as deep on one side as on the other. When the face is pricked with a pin on either side the corner of the mouth is drawn up, and there is no distinct evidence of facial palsy. He has a tendency to repeat in a whisper what is said to him. Pin-prick evidently causes pain in the face. Tactile sensation can not be tested anywhere because of the mental state. He partially understands what is said to him. The neck muscles are distinctly rigid. The right upper limb appears to be completely paralyzed; pricking with a pin in this limb causes some movement of the left upper limb, but none of the right upper limb, and the pricking is not correctly localized. The right upper limb seems to have impaired sensation. The biceps and triceps reflexes are about normal in the left upper limb, but somewhat exaggerated in the right upper limb. Testing with a feeding-cup seems to indicate that the man has right hemianopsia. The patellar reflex is much diminished on the left side and is normal on the right side. The Achilles-tendon reflex is prompt on each side. The right lower limb seems to be completely paralyzed. Pin-prick causes no movement of this limb, but probably causes some sensation of pain, as the man moves his left limbs as though he were in discomfort, and yet pain sensation appears to be diminished in the right lower limb. The Babinski reflex is not obtained on the right side, the toes not being moved in either direction; it is probably present, though somewhat uncertain on the left side." Leucocytes were 12,400.

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[12] Kölpin: Arch. f. Psychiat., xlv, No. 2, p. 595.

Course of Disease.—The important features of this case were a gradually developing right hemiplegia, probably right hypalgesia, right hemianopsia, rigidity of the neck, a temperature that varied from 100 to 101, and the absence of ocular changes. Dr. Martin performed an exploratory operation April 28. Nothing abnormal was found. The right upper limb moved in response to electrical stimulation in the motor area. The man died April 30.

Autopsy.—A tumor occupied the greater part of the lower half of the left occipital lobe. It extended almost to the inner capsule and had the appearance of an angioglioma.

Case 3.—*Patient.*—Mrs. Y., aged 45 (Lab. No. 449), was seen by me March 23, 1908, in consultation with Dr. J. Thorington, by whose courtesy I report the case. Dr. Thorington sent the patient to me with the diagnosis of brain tumor, a diagnosis that seemed to me correct after an examination. My notes as taken from my case book are as follows:

General Examination.—"Mrs. Y. . . . has been complaining of vertigo about one year. When in bed she is obliged to lie on the right side; when she turns on the left side she feels 'sick and as though everything were going from her.' Her weight has decreased from 155 pounds to 121 pounds. Turning of the head to the left while lying down produces nausea. She vomits often in the morning. She has had pain in the muscles of the neck, and often a throbbing sensation in the frontal and occipital regions, especially when bending over. She is hungry all the time, and has a 'most vigorous appetite.' The menses are regular. The throbbing in the back of the neck is very severe and extends down the neck to the shoulders. She can not read unless the print is very large. She complains of kicking and jerking in her lower limbs, and can not lie down in the daytime because of this, and is kept awake at night by it. All symptoms began a little more than a year ago. The pain in the head is slight when she is sitting very still. She chokes when eating and swallowing, but if her attention is diverted she has no difficulty of this kind. She has three children, all healthy, and has not had any miscarriages. She complains of numbness all over both sides of the face, the numbness began on the left side of the face. The roof of the mouth also is numb. She has not had any pain in the face. She staggers on the street like a drunken person. Her behavior at times appears childish. The right pupil is a little larger than the left and both react to light, accommodation and convergence. She has marked nystagmus in looking to the right, and less in looking to the left, none in looking upward or downward. The nasolabial fold is slightly less distinct on the right side, when the face is at rest, but in showing the teeth or in drawing up either corner of the mouth separately, there is weakness of the left side in the whole distribution of the facial nerve. The right masseter is stronger than the left. Touch and pain sensations are normal in each side of the face. She has marked diminution of the conjunctival and corneal reflexes on the left side. She hears the voice and watch well on each side. The tongue when protruded sometimes deviates to the right, sometimes to the left, or is in the median line. The soft palate moves normally. The finger-to-nose test shows very little if any ataxia. The grasp of each hand is good. There is no impairment of voluntary movements in either upper limb. The biceps and triceps reflexes are exaggerated in each upper limb. Touch and pain sensations are normal in the hands and feet. Voluntary power is normal in the lower limbs. The patellar reflex is exaggerated on each side. The Achilles reflex is a little exaggerated on each side and about equally. There seems to be a slight Babinski reflex on each side, but it is uncertain. She has no ankle clonus. She sways very distinctly with the eyes open, and more so with the eyes closed, and during my examination she falls frequently toward the right. The gait is ataxic, and more so with the eyes closed." She presented on one occasion adiadokokinesis in the right hand.

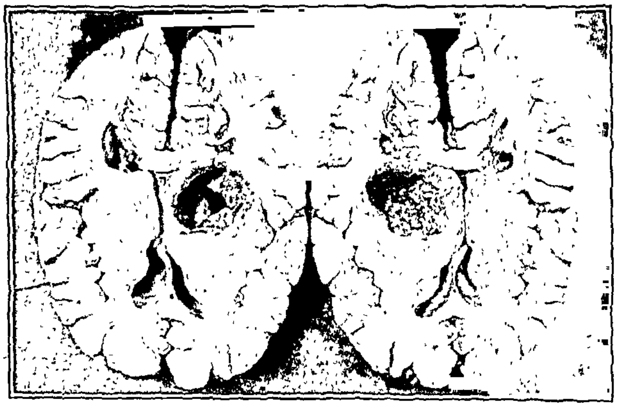

Fig. 1.—Case 1. Adenocarcinoma of the right optic thalamus and adjoining region.

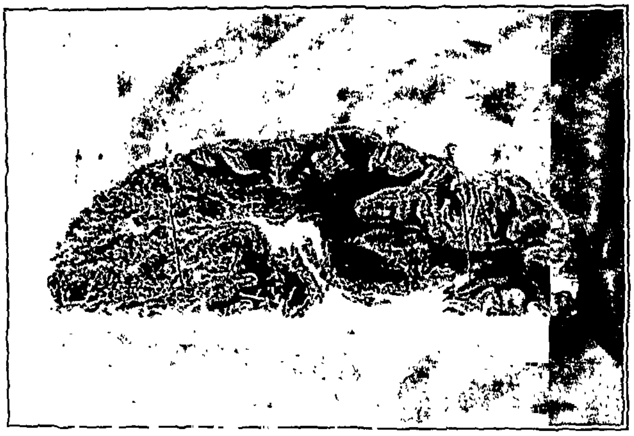

Fig. 2.—Case 2. Glioma of the left occipital lobe.

Ocular Examinations.—A letter from Dr. J. Thorington, dated March 21, 1908, stated: "The ophthalmoscope does not reveal any pathologic changes at this time. The eyegrounds are apparently normal and the discs are not elevated. Vision in each eye is normal, and the refraction + 1.25 sphere, together with presbyopia." On April 7, 1908, Dr. Thorington wrote: "Yesterday and today I noticed that the nasal side of each disc has commenced to be elevated and indistinct in outline; the retinal veins are enlarging and becoming tortuous." Dr. Thorington reported that the swelling of the discs reached 7 D. on April 13 and 10 D. on April 18. Operation was considered, but as nothing more than palliation could be offered the relatives declined to have an operation. Death occurred May 4, 1908.

Autopsy.—A glioma occupied the whole of the pons. The left optic thalamus and adjacent region were much larger than the corresponding area of the right hemisphere. The lateral ventricles, especially the left, were distended. A microscopic section from the tumor of the pons stained by the Weigert method, showed few nerve fibers. The anterior pyramids were well stained by the same method.

Case 4.—*Patient.*—D. T. (Lab. No. 422) was admitted to the Philadelphia General Hospital July 12, 1907.

History.—The patient had used alcohol, absinthe and tobacco to excess, but denied having contracted any venereal disease. He had been a clerk for twenty-five years. His symptoms began about ten months before his admission. He suddenly lost consciousness about thirty minutes, and six days later he had a similar attack which lasted three days. He could not describe these attacks more fully, but stated that he had had only two. He had had constant headache since the beginning of his symptoms, and it had varied in intensity, and was confined to the frontal region. He had been gradually losing power in his right upper and lower limbs, and his general vigor was impaired; he had lost his appetite and was unable to use his mental faculties as well as formerly.

First Examination.—His gait on admission was slightly hemiplegic, and he dragged the right toes. Sway was increased by closing the eyes. The pupils were unequal, the left being slightly larger. Response to light and convergence was preserved. There appeared to be some weakness of the right side of the face in showing the teeth. Both upper limbs were weak, the right more so. There was slight tremor in both hands. The biceps and triceps reflexes were prompt on both sides. The right patellar reflex was slightly exaggerated, and ankle clonus was present on the right side. The speech was slurring, and test words were pronounced with some difficulty. His memory was poor, and he was easily confused. Soon after he entered the hospital he acted queerly, was dazed, attempted to disrobe in public, and did not know how to put on his clothing.

Second Examination.—Dr. Weisenburg, examining the man Sept. 18, 1907, noted that the right lower limb was contracted, and that the right upper limb was spastic. Right partial hemianopsia, and right hemihypesthesia were present.

Third Examination.—The man was examined by me Jan. 1, 1908. He was very stuporous, talked voluntarily, but irrationally. He heard when spoken to, but did not reply correctly. He had rigidity of the neck. The upper limbs were very rigid, especially the left. The upper limbs were adducted on the chest, with the forearms flexed on the arms, the left more than the right. The left palpebral fissure was larger than the right. The nasolabial fold was smoothed out on the left side. The biceps and triceps reflexes were restrained by the spasticity of the limbs. Although there was *no distinct conjugate deviation*, he had a tendency to turn his head to the right, but the eyeballs did not deviate. The legs were kept flexed on the thighs, the right as much as the left. They could be extended to an obtuse angle with the thighs. The spasticity was great and equal in the two lower limbs. Ankle clonus was persistent on both sides. Involuntary twitching occurred in the lower limbs.

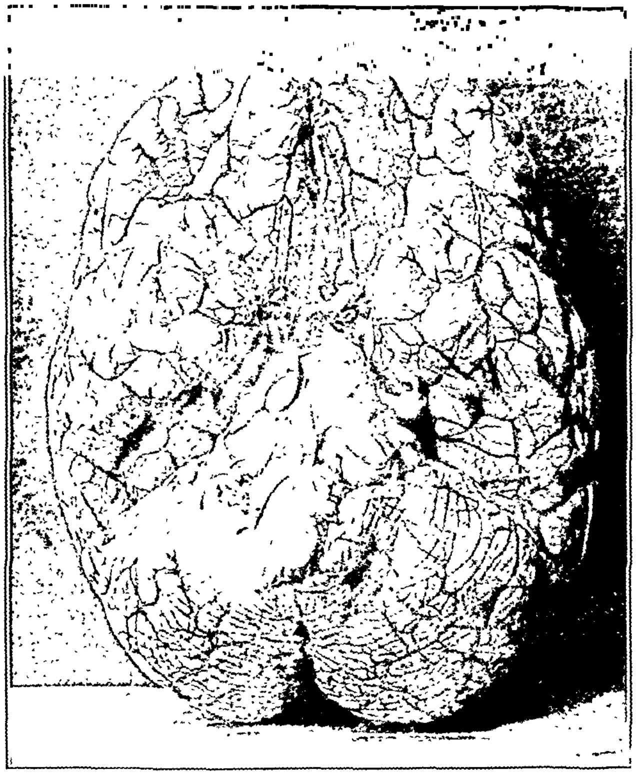

Fig. 3.—Case 3. Glioma occupying the entire pons.

Course of Disease.—At the time he came under my observation the symptom-complex was bilateral, and as much pronounced on one side as on the other. The history stated that the hemiplegia had developed gradually, but the left side seems soon to have become affected. Unfortunately no examination of the eyes was made; at least no record was made of any examination. It probably would not have revealed papilledema. The condition became gradually worse and the man died Feb. 2, 1908.

Autopsy.—The right optic thalamus was much larger than the left, and the enlargement was uniform. The left was concave slightly on its inner side to accommodate the enlarged right optic thalamus. The tissue posterior to the right optic thalamus had distinctly the appearance of a glioma, and the tumor was fairly well defined, especially where it projected as a rounded mass into the posterior horn of the lateral ventricle. No limitation could be placed to the anterior border of the tumor.

Case 5.—*Patient.*—R. F. (Lab. No. 452) came into the University Hospital, July 23, 1908, referred by Dr. Rice. His age was 25. The notes taken at that time are as follows:

History.—"About nine months ago he began to have trouble with his eyes, his vision appearing indistinct and blurred. The disturbance has increased and for three or four months he has been seing double. The eyes ache a great deal. Shortly after the beginning of the visual disturbance he noticed that his lower limbs were unsteady, and the difficulty in walking has increased. Walking in the dark is especially difficult. During the winter he began to have severe headaches. At first these were daily, but they have become less frequent, until now he has them every three or four days. The severity of the headache has increased. The headache usually begins in the morning and lasts most of the day. He frequently vomits when he has a headache. The vomiting is not projectile, and he is nauseated when he vomits. Two or three months ago his speech became thick. He is dizzy when he has a headache if he attempts to move about. He is becoming a little deaf. He has never had convulsions, but a few times he has had a shaking of the left forearm. He has had some difficulty in passing the urine, but no disturbances of the bowels. He has not had any numbness. He has lost flesh. He denies venereal disease."

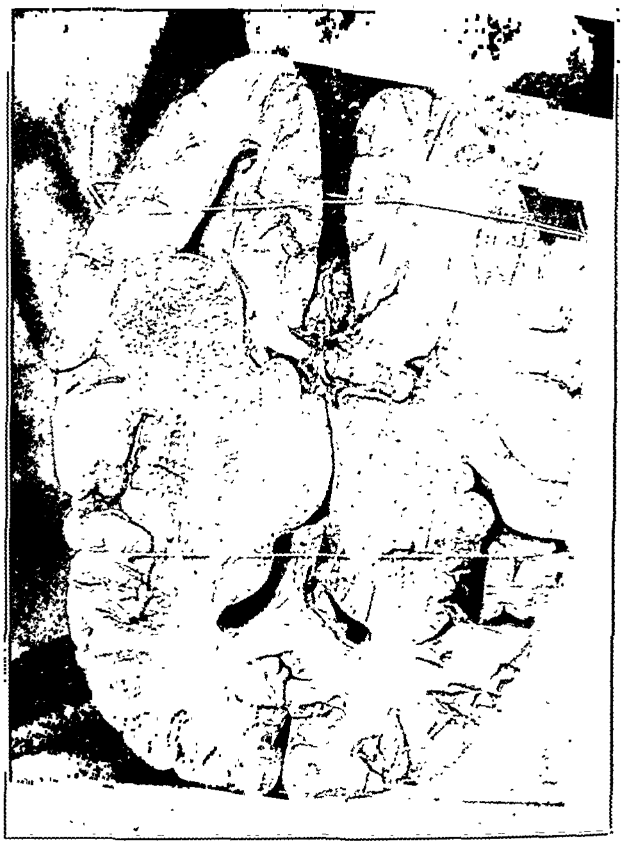

Fig. 4—Case 4 Glioma in the region posterior to the right optic thalamus.

Examination.—This, made by me July 27, 1908, gave the following results: "In walking he staggers with the eyes open or closed, and the tendency seems to be to go more to the left. His face has a smoothed-out appearance, like the face in paresis. He wrinkles his forehead well and about equally on the two sides, although possibly there may be a little weakness in the upper distribution of the seventh nerve of the left side. The left eyelids can be opened more easily when closed in resisting passive motion; the left corner of the mouth is a little weakened both in showing the teeth and in drawing up the corners of the mouth separately. The tongue is protruded slightly toward the right. He has slight lateral nystagmus in looking to the extreme right or left. The hearing of the voice and of the watch is distinctly impaired in the left ear, but the hearing may be imperfect also in the right ear. The left side of the face in the region of the temporal and masseter muscles is flattened as though these muscles were much atrophied. In biting there is no contraction in either the left temporal or left masseter muscle, and the man says that his teeth do not touch on the left side. The left soft palate is paretic. Tactile and pain sensations are diminished in the distribution of the left fifth nerve, but not lost. The left conjunctiva and cornea are almost anesthetic. The grasp of the right hand is about equal to that of the left, and is fair. The biceps and triceps reflexes are about equal, possibly a little prompter on the right side. Tactile and pain sensations are probably a little diminished in the left hand, but this is questionable. The pateller reflexes are about normal. He has a slight Romberg sign. The Achilles-tendon reflex is prompt on each side, and about equal on the two sides. The voluntary power in the lower limbs is about normal." The patient stated at this examination that he had had a "touch-like" sensation in the left side of the face, but only when he touched the face, and he had never had any pain in the face. On another occasion it was stated that the right pupil was slightly larger than the left, both eyes reacted to light and in accommodation, but the response seemed to be slower in the right eye. In testing taste there seemed to be no impairment to sweet or bitter substances. The recognition of objects in the hands and the sense of position were intact. A report from the eye dispensary stated that there was beginning papillitis, more advanced in the right eye. The fields were concentrically contracted. The left external rectus was paretic. The reaction of the left seventh nerve as tested by Dr. McConnell was normal to the galvanic current. The left fifth showed a quantitative but no qualitative change. The left side of the larynx was found to move less freely than the right side. The deafness of the left ear was attributed to catarrh, and Dr. Butler, in Dr. Randall's clinic, was unable to find any signs of nerve deafness.

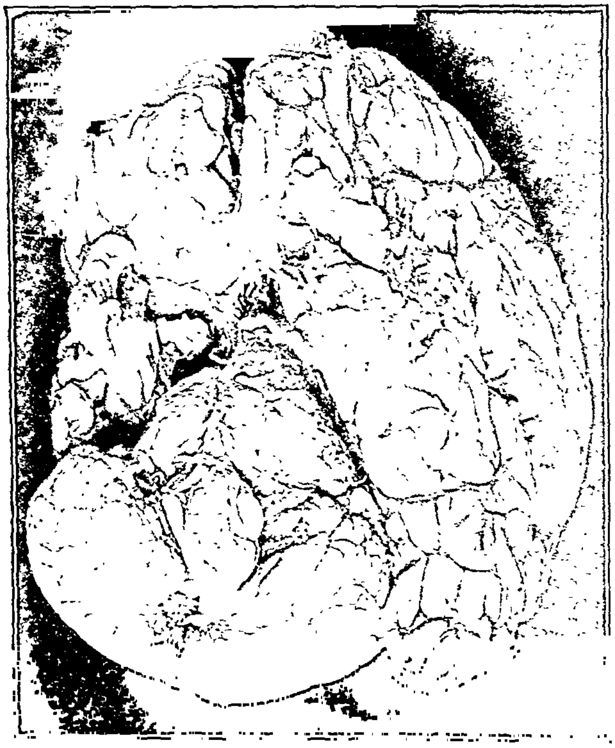

Fig. 5.—Case 5. Glioma of the left half of the pons and left half of the medulla oblongata.

An operation was performed by Dr. Frazier in the hope that a tumor in the region of the Gasserian ganglion might be found, although such a finding might be doubtful. Decomposition might be of benefit, and save the sight. It was the only chance offered to the patient for relief, and proved to be ineffectual.

Autopsy.—A tumor occupied the entire left half of the pons, the right half appearing normal to the naked eye. It involved the entire left half of the medulla oblongata, causing much enlargement corresponding to the great increase in size of the left half of the pons. The right half of the medulla oblongata appeared to be normal to the naked eye. The left cerebral peduncle was not enlarged. No tumor was found in the left Gasserian ganglion, and this ganglion seemed to be in good condition. A microscopic section of the medulla oblongata showed that the tumor invaded the right side. Nerve fibers were found in all parts of the section, but the tissue was rarefied as though the nerve fibers were pushed apart by the infiltrating glioma.

CASE 6.—*Patient.*—G. D. (Lab. No. 450), aged 50, was a patient of Dr. W. H. Teller, with whom I saw the case in consultation and by whose courtesy I report it. Syphilis was denied. The notes obtained March 18, 1908, are as follows:

History.—"Fifteen months previously while sitting on the porch he suddenly became aware of some visual disturbance, but was not unconscious, he could not see plainly, could not hold a pencil properly, could not say the words he desired to say; he was able to walk, he vomited, had severe pain over the entire head, slept badly the following night, but the next day he returned to work. He has not had any vomiting since that time. During the past three weeks he has seen objects before his eyes resembling snakes."

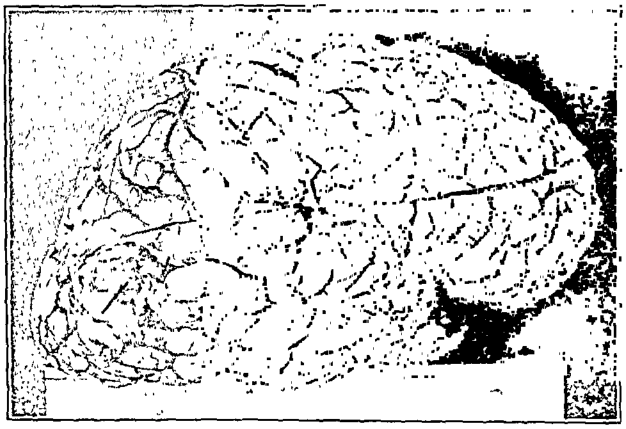

Fig. 6.—Case 6 Glioma of the right occipital lobe, indicated by a line.

First General Examination.—"Pupils are equal; the reaction to light and in convergence is preserved; there is no nystagmus; no disturbance of tactile or pain sensation in the face. The patient can wrinkle the forehead, close the eyelids and draw up the corners of the mouth well on each side; the tongue is protruded in the median line; he hears the voice distinctly in each ear. The finger-to-nose test shows no incoordination; the power is good in both upper extremities, as is also sensation for touch and pain. The patient recognizes objects in either hand with the eyes closed, and has no impairment of the sense of position. The triceps and biceps reflexes are normal. The station and gait are normal with eyes open or closed. The patellar tendon reflexes are prompter than normal. The Achilles-tendon reflexes are prompt. Babinski's sign is not obtained. Sensation in the lower limbs is normal."

Second General Examination.—Notes taken on April 23, 1908, are as follows: "The right external rectus is weak.

There is no hemianopsia, no anesthesia of the conjunctiva, no weakness in the facial distribution of either side. Touch and pain sensations are normal in the face. Masseter and temporal muscles contract well on each side. Tongue is normal. Hearing of voice and watch is good in each ear. There is no area of tenderness of the scalp, no stiffness of the neck. The power of each upper limb is good. A slight Romberg sign is obtained at this examination. He has had frequent attacks in which wriggling bright lights, beginning always in the right field, gradually passed to the center of the field, and disappeared in the left half of the field; these attacks were with dimness of vision, beginning also in the right field and disappearing in the left field. Since he has had optic neuritis he has seen black objects like snakes, rosettes, and forms of leaves in front of the eyes, and sometimes he sees the heads of persons." In other respects the examination gave much the same results as obtained at the previous examination.

Ocular Examination.—Iridic reflex to light is slow, prompt in convergence. There is limitation in outward excursion in both eyes, especially to the right. No limitation in upward movement. Pupils: O. D. 2½ mm. O. S. 2¾ mm. Vision O. D. 10/20, O. S. 10/40. Marked papilledema, periphery 2D., center 7D. No hemianopsia. Fields are greatly contracted.

Operation.—Dr. Teller operated, as we hoped to find a tumor in the left occipital lobe, or at least produce a decompression that would benefit the patient. No tumor was found at the operation.

Autopsy.—A tumor measuring 3 cm. in length and 2 cm. from above downward was found in the lower part of the right occipital lobe. Microscopically it had the appearance of a glioma.

I am indebted to Dr. Alfred Reginald Allen for the photographs.

4409 Pine Street.

EXTENSIVE GLIOMATOUS TUMOR INVOLVING THE CEREBELLUM AND THE POSTERIOR PORTIONS OF THE MEDULLA, PONS AND CEREBRAL PEDUNCLE AND THE POSTERIOR LIMB OF ONE INTERNAL CAPSULE*

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PHILADELPHIA

Gliomatous tumors growing in the cerebellum are usually confined to it and only rarely do they extend into the adjoining parts. The following case is reported by itself because of the extraordinary growth of the tumor, which involved practically all parts of the cerebellum, but especially the inferior vermis, in an irregular manner all of the cerebellar peduncles, the posterior portions of the medulla oblongata, pons and cerebral peduncle, to a limited extent the posterior part of the optic thalamus and the posterior limb of the left internal capsule. The duration of the symptoms was about two years. The patient was under constant observation and the progress of the case was carefully observed, and some interesting observations were made in the progress of t[illegible], the tumor evidently involving the [illegible]d then growing into the cerebral peduncle and the medulla and then gradually implicating the posterior part of the pons. The growth was not properly diagnosed, but it was thought that there was a cerebellar tumor and an operation was performed over the right hemisphere. A part of it was removed for microscopic study. Definite cerebellar symptoms followed this removal.

REPORT OF THE CASE

Patient.—R., painter, aged 46. His family history was unimportant with the exception that both his father and mother died of Bright's disease. The patient had the usual diseases of childhood. He used tobacco moderately and alcohol to excess. He was a married man and had four living sons. There was no history of syphilis.

History.—The patient had been complaining for two years, his first symptom being headache, which was especially centered over the right parietal and occipital bones and back of the head. He was, however, able to work for a year, that is, until March, 1907, and then irregularly for about four months, ceasing then entirely. From this time until his death, which occurred in May, 1908, or about one year after the greater intensity of symptoms, he was under observation either in the dispensary or hospital. The headache was constant and of a dull character, being very great at times, increased by movement and not made better on lying down. A few months after the onset of the intense headaches, he began to be dizzy, describing the sensation as if he were rotating around the object at which he was looking. This dizziness became so intense that from the first he was compelled to have assistance in going up and down stairs and in walking, his gait being like that of a drunken person. Soon after this he began to be occasionally nauseated in the morning, this being accompanied by vomiting, later becoming more marked. In a short time he began to complain of general weakness, insomnia and of nervousness, and then noticed that he had some difficulty in talking, which consisted in an increasing thickness and slurring in his enunciation, being worse at times.

Anteoperative Examinations.—When he first came under observation at the dispensary he complained only of the general symptoms of headache, nausea, vomiting and dizziness with general nervousness, and walked like a drunken person. The indistinctness and slurring in his speech soon developed and he complained of weakness in his vision, especially on the right side, and then began to see double, one object being above the other. At the same time there was a drooping of the right upper lid. Examination discovered only a general increase of the reflexes and weakness in looking to the right and no incoordination. There was at first no choked disc, but subsequent examinations made by L. Webster Fox demonstrated an increasing optic neuritis which was equally marked in both eyes, the height of the swelling reaching 7 diopters. The patient was then admitted to the Medico-Chirurgical Hospital under the care of Charles S. Potts. Examination demonstrated a distinct drunken, ataxic gait, the patient staggering more to the right. Station was also uncertain. The power in the upper and lower limbs seemed to be normal, the grip measuring by the dynamometer 90 in both hands. The tendon reflexes in the upper limbs were normal; in the lower slightly increased. There was no ankle clonus or Babinski on either side. Sensation was not disturbed. The finger-to-nose and heel-to-knee tests showed some ataxia, especially on the right side. There was no weakness of the muscles of the back. The cranial nerves were normal with the exception that there was some diminution of hearing, especially on the left side, and there was drooping of the right upper lid, with weakness in the right sixth and inferior oblique. The pupils were normal and there was no disturbance in their reactions. There was nystagmus on looking to the left and upward. Speech was thick and indistinct.

Operation.—A decompressive operation was performed over the right cerebellar area. The right cerebellar lobe was cut and tissue removed for microscopic examination, but nothing was found. The patient made an uninterrupted surgical recovery; his optic neuritis gradually subsided; although at first there were some hemorrhages, his headache, dizziness and nausea became less and slightly improved.

Postoperative Examinations.—Examination made by me about three weeks after the operation demonstrated that the patient's headache subsided at first but soon became more marked and about equally so on both sides of the head in the posterior portion. The nausea and vomiting were less after the operation. The dizziness subsided for the first three weeks and then became as marked as before. This was not present when the patient was in a recumbent position or when sitting, but when he suddenly turned his head to the right he had a sensation of swimming or lightness of the head which was not of a definite character. Turning the eyes in any direction also produced the dizziness. When he stood up the dizziness. especially of self, was extreme, and he also had a sensation as if objects in front of him were swimming. A more definite description of the dizziness could not be obtained.

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

* From the Laboratory of Neuropathology, Medico-Chirurgical College.

The pupils were larger than normal, irregular in their outline, and their reactions both to light and to distance were sluggish. He always saw double, objects being one above the other, and he generally kept his left eye closed so as to avoid the diplopia. Nystagmus was present very slightly on looking straight ahead, but was mostly marked in looking to the right and to a less extent to the left and then upward and downward. Convergence was normally performed in looking downward and in the median line, but in looking straight ahead and upward not so well, but the attempt at convergence was not lost. There was a weakness of the right external rectus and right inferior oblique.

The patient could wrinkle his brow well on both sides. the folds being equally marked, but the right brow was distinctly weak. There was a marked drooping of the right lower eyelid and corner of the mouth, and the right orbicularis palpebrarum was weak. The right masseters and temporals did not contract as well as the left and when the jaw was opened it deviated to the right. Sensation for touch and pain over the distribution of the right fifth nerve was diminished. Smell was not altered and taste could not be tested. Hearing was diminished on both sides. Throat examination demonstrated sluggish movements of the soft palate and some weakness of the vocal cords on both sides. His speech was thick, indistinct and difficult to understand.

At first the patient had no paralysis, but when examined by me, he had a distinct weakness in the right upper and lower limb, this consisting in a diminished grip and resistance. The left limbs seemed normal in power. The tendon reflexes of both the upper and lower limbs were prompt and equally so. There was no ankle clonus or Babinski on either side, plantar irritation causing no movement of the large toes. The patient stated that he could feel touch and pain better on the left side of the body than on the right. This was also true for bone sensation.

The head was held in the median line and the protrusion of the hernia in the right cerebellar area was becoming more marked. When the patient sat up in bed the incoordination of the body could be easily noticed; he swayed in any direction, but especially to the right. He could not stand up himself, and when not supported he would fall, especially to the right. He could not walk alone, but with aid he had a drunken, ataxic gait, more marked to the right side.

There was distinct hemiasynergia and ataxia in the right upper and lower limbs, this not being influenced by closure of the eyes. There was very little ataxia in the left upper and lower limbs. There was no disturbance of the senses of position, movement, localization or pressure.

Later History.—From this time on until his death, May 5, 1908, about six months after the operation, the patient was chair-ridden. He gradually became more stupid mentally and it was with difficulty that he could be made to understand, owing partially to his stupidity and then again to the fact that his hearing became very bad, being worse on the left side. When sitting up in his chair he would have to be supported on all sides, otherwise he would fall in a heap. He could not voluntarily sit up and if left free for a moment his body would immediately fall. He had a habit of sitting with his head bent to the right, the chin near his shoulder, the whole right side of the body drooping. His headache became less, but his dizziness grew more marked, and while at first this was not present when lying quietly, toward the latter end of his life, even when in this position with his eyes closed he had a sensation of self moving to and fro. He preferred to lie on his left side because he said this made him feel somewhat easier. The nausea and vomiting subsided.

Gradually there developed a prominence of the right eyeball. The patient would constantly keep his left eye shut, so as to avoid seeing double, and when he opened his eye there was a constant to-and-fro jerking of his eyeballs. His pupils became very large and their reactions both to light and movement were ultimately lost. It was with difficulty toward the last that he could be prevailed on to move his eyeballs or perform any movement. The weakness in the distribution of the right seventh nerve became more marked, especially in the lower part, and the right fifth nerve was involved both in its motor and sensory portion. The tongue could not be protruded more than beyond the lips; its movements were weak and it deviated to the right. The patient's speech became increasingly thick and indistinct. His eating became impaired because it was difficult for him to chew and he could not swallow readily, choking quite frequently. During the two months before his death there was constantly dribbling of saliva and his speech became unintelligible.

The weakness in his right upper and lower limbs became more marked and toward the end there was also some weakness in the left side, especially of the lower limb. The ataxia became gradually more distinct and the asynergic movements were earlier and more quickly demonstrated in the right limbs. There was also ataxia in the left limbs. It was especially noticeable that as long as the mentality was fairly good the tonicity in the lower limbs was about normal, but with the decrease of his mental power the ataxia became more marked and there was present a considerable lack of tone. Toward the end he voided urine involuntarily.

Observations were made on his respiration and pulse for about a month before his death, but no changes were noticed.

Macroscopic Postmortem Examination.—The brain was removed the following day. The right lateral lobe of the cerebellum was soft, this being the point of the operation. From gross examination before cutting, no enlargement was found of the peduncles, pons or cerebellum.

Microscopic Examination.—Sections were made of the cerebellum, medulla, pons, cerebral peduncles, of different portions of the brain and the spinal cord. An infiltrating gliomatous tumor was found, this implicating both lateral lobes of the cerebellum. especialy the left, and practically all parts of the vermis. The growth involved all the cerebellar peduncles in an irreguar manner, the posterior portion of the medulla almost as low down as the pyramidal decussation, the posterior part of the pons and cerebral peduncles, especially around the aqueduct of Sylvius, extending toward the cerebrum into the optic thalamus and involving the extreme posterior portion of the posterior limb of the internal capsule on the left side.

The growth was rich in cells; some nuclei were larger than others, being round, oval or spindle-shaped. They stained darkly and were granular. By the ordinary acid stains little intercellular substances could be seen where the cells were dense. but in other parts fibers could be made out, especially on the border of the growth. In parts, especially around the aqueduct of Sylvius, the vermis and the left lateral cerebellum, the cells were very dense and packed tightly together. There was no definite border to the growth, as tumor cells could be detected considerable distance away from the main mass. The vessels within the growth were thickened and had undergone in places hyaline degeneration.

Cerebellum: The size of the cerebellum was not increased. In practically all portions of the vermis, but especially in the inferior lobe, the cellular infiltration was intense. The left lateral lobe was infiltrated more than the right and infiltration was greater in the parts around the intrinsic nuclei and became less as the cortex was approached, but tumor cells could be seen in all portions.

Medulla: Sections of the medulla showed a broadening of the anteroposterior diameter. There was no degeneration of the motor fibers on either side. The growth involved the parts around the fourth ventricle. On the right it was considerably larger and infiltrated the nucleus cuneatus and gracilis and partially the restiform body. It implicated also the nuclei of the eighth, ninth, tenth and twelfth nerves and to some extent the nucleus ambiguus. The nerve cells, however, of these nuclei were not altogether destroyed, as here and there cells could be seen. The intramedullary portions of the twelfth, ninth and tenth, and eighth nerves were not degenerated, although tumor cells infiltrated parts of the fibers. On the left side, the infiltration was less, but here also the twelfth, ninth and tenth, and eighth nerves were partially involved, as were also the nucleus cuneatus and gracilis.

Pons: Sections made of all parts showed a broadening of the anteroposterior diameter, this becoming greater as the upper part was approached, the greatest broadening adjoining the cerebral peduncles. The growth was centered around and especially in front of the aqueduct of Sylvius, distorting it out of shape. Both sides were equally involved. The nuclei of the fifth nerves on both sides were implicated, especially the right. The nuclei of the sixth and seventh nerves were also involved, although all of the cells were not destroyed. The intramedullary portions of the fifth, sixth and seventh nerves were infiltrated in parts with tumor cells, but were not degenerated. Tumor cells could be found in the median fillet and to some extent in the anterior motor fibers. The posterior corpora quadrigemini, the superior cerebellar peduncles and the nuclei of the fourth nerves were almost totally replaced by tumor cells.

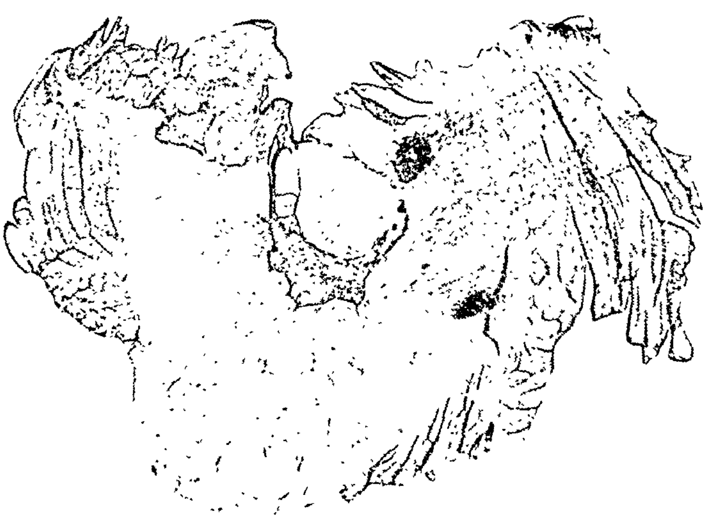

Fig. 1.—Section (actual size) cut through pons, middle cerebral peduncles and cerebellum. At the left, the site of the cerebellar operation can be seen. The tumor involves both cerebellar lobes, the left more so, all of the vermis and the posterior part of the pons. The left middle cerebellar peduncle is more involved than the right.

Cerebral Peduncles: There was no degeneration in the foot of the cerebral peduncles. The growth in this area involved the parts around the aqueduct of Sylvius, partially destroying the nuclei of the third nerves and the commissural fibers between them. The posterior part of the intramedullary fibers of both third nerves were implicated in the tumor. Both anterior and posterior corpora quadrigemina were involved, as were also the red nuclei, this being especially true on the right. Tumor cells could be found in practically all parts of the section. The antero-posterior diameter of the peduncle was increased.

Optic Thalamus and Internal Capsule: Some tumor cells could be seen in the posterior part of the thalamus and the growth involved the posterior portion of the internal capsule on the left side.

Cranial Nerves: Sections of the cranial nerves, with the exception of the first, showed some degeneration of the fibers. The right third and fifth nerves were more involved than the left, but in the other cranial nerves the degeneration was equal.

Spinal Cord: Sections were taken from the cervical, thoracic and lumbar cord and showed no degeneration. The nerve cells were normal and the anterior and posterior roots were intact and showed no degeneration.

Evidently the first symptoms observed were those referred to the cerebellum, such as headache, which was soon followed by nausea, vomiting, and a cerebellar gait in which the staggering was more to the right; then dizziness which was first described as if the patient were revolving around the object at which he was looking. He then began to have some difficulty in talking and in swallowing, and about the same time vision became impaired, although repeated ophthalmoscopic examinations did not demonstrate any choked disc, and it was not until about a year after the beginning of the headache that the neuritis made its appearance, rising then to 7 diopters. About the same time he began to see double, seeing one object above the other, and had drooping of the right upper lid. Examination demonstrated very little ataxia of the right upper and lower limbs, although the ataxia in walking was extreme. The patient also had a diminution of hearing on the right side. Because of the pressure symptoms, the cerebellar gait, more to the right, weakness of the right third nerve and the diminution of hearing on the left side, with difficulty in eating and talking, it was thought that he had possibly a cerebellar tumor, but the diagnosis was not clear because of the multiple cranial involvement on both sides.

An operation was performed over the right cerebellar hemisphere in which part of the right cerebellar hemisphere was removed and a whole group of symptoms developed directly after the surgical recovery. While before the operation there was not much ataxia and weakness in the right upper and lower limbs, this was marked afterward, and from then on until the patient's death, about five months later, the weakness progressed and the ataxia not only involved the right upper and lower limbs, but to some extent the left limbs. It was also noticeable that while before the operation there was no ataxia of the trunk muscles and apparently no weakness, afterward the patient could not sit up, but fell immediately in a heap and especially to the right. The reflexes were unaltered. For a short time he was able to walk, but his gait was distinctly ataxic and he staggered much more to the right. Alternate flexion and extension and other movements of the right upper and lower limbs were decidedly *more incoordinate directly after the operation.*

It is interesting to note that while clinically the preponderant cerebellar symptoms were on the right side, pathologically the left cerebellar involvement was greater, and that the vermis was more involved than either lateral lobe. It is probable, then, that the greater right cerebellar symptoms can be ascribed to the direct injury to the right lateral hemisphere at the time of the operation.

This is an interesting experiment on a human being and shows that the right cerebellar lobe controls coordination chiefly of the right limbs and also to some extent has an influence on muscular power. This has been demonstrated by other observers and has also been reported by me in a previous paper.[1] It is, however, interesting to note that while the ataxia and weakness developed in the right limbs, there was very little atonia and this did not make its appearance until the patient became stupid mentally.

The headache, nausea, vomiting and choked disc diminished gradually after the operation, but the dizziness became much more intense. While at first he felt as if he were revolving around an object, he now developed a constant dizziness which finally prevented him from sitting up. At first he only had this when moving his head or eyes, but later it was also present when lying quietly. He described the dizziness as a sensation of swaying or swimming either of self or of objects.

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[1] Weisenburg, T. H.: *Diagnosis of Tumors and Other Lesions in the Cerebello-Pontile Angle*, THE JOURNAL A. M. A., 1908, i. 1251

In this case, as in others of mine, no deductions could be made from the type of the dizziness as to the location of the lesion. For a short time after the operation it was greater when looking to the right, but soon was equally marked in moving the head in any direction.

As the tumor involved successive portions of the cerebral peduncle, pons and medulla, some interesting symptoms were observed. At first the pupils were normal in size and reactions, but gradually they became larger and irregular, and their reactions to light and movement of the eyeballs became first impaired and then lost, the contraction of the pupils to convergence being retained longest. He developed palsy of the right sixth nerve and drooping of the right upper lid and weakness of the right inferior oblique. There were at first some nystagmoid jerkings in looking to the right and upward, but this may have been due to the weakness of the ocular muscles. Gradually the nystagmus increased, being always greater when looking to the right, less so to the left, and then upward and downward. Toward the latter end of his life the patient constantly kept his left eye closed because he saw double and there was a constant to-and-fro jerking movement of the eyeballs. At first convergence was normal in looking downward, somewhat impaired when looking straight ahead and more so when looking up. As the disease increased convergence became lost entirely, although for a long time the attempt at convergence was retained. It was also noticeable that he developed a protrusion of the right eyeball.

The above symptoms are referable to involvement of the oculomotor nuclei and are of extreme interest. It is presumable that the tumor grew slowly and that gradually the nuclei became diseased. While the growth involved all of the third nuclei many of the cells escaped and the absence of the total implication of the ocular muscles can be explained on this basis. It is interesting to observe that the reaction of the pupils to convergence was lost last. This is due perhaps to the fact that the converging movement is the strongest of the ocular movements and that greater musculature is involved, but it is probable, as I have already suggested,[2] that convergence has a distinct cortical center which is apart from associated ocular movements in any direction, and that just as there can be a paralysis of associated ocular movement upward, downward, to the right or left because of a lesion in the posterior part of the pons and crus, so there can be failure of convergence in similar directions. In the present case convergence was at first lost upward, impaired when looking straight ahead, and normal when looking downward. This I have observed also in other cases.

Nystagmus is fairly constant as a cerebellar symptom, although often I have found difficulty in differentiating between such nystagmus and that due to weakness of ocular muscles. The tendency is to describe any sort of jerking movements of the eyeballs as nystagmus, but I am inclined to differentiate and to ascribe cerebellar nystagmus only to that type in which there are to-and-fro or oscillatory movements irrespective of movement of the eyes, although they may be slightly increased by deviation. The so-called nystagmoid jerkings which are obtained only on looking to the right or left are in most instances due to a weakness of ocular muscles and it very often happens that this may be the first symptom of a succeeding paralysis of ocular nerves.

The protrusion of the eyeball is interesting and is difficult to explain. It has been observed in tumors in practically all parts of the cerebrum and cerebellum and no adequate explanation has as yet been offered.

Both the anterior and posterior corpora quadrigemina were implicated by the tumor growth, but it is difficult to ascribe any definite symptoms to such involvement. Lesions of the anterior corpora quadrigemina supposedly give disturbances of vision, but because of the presence of optic neuritis no deductions can be made. It is supposed that in the posterior corpora quadrigemina the central auditory fibers ascend to the temporal lobe. It was notable that there was disturbance of hearing very early, and while at first it was greater on the left side, it became markedly involved on both. Tests for hearing showed central deafness, but it is difficult to tell whether a lesion of the corpora quadrigemina caused the disturbance of hearing, inasmuch as both eighth nerves were partially diseased and their nuclei were also somewhat involved by the tumor.

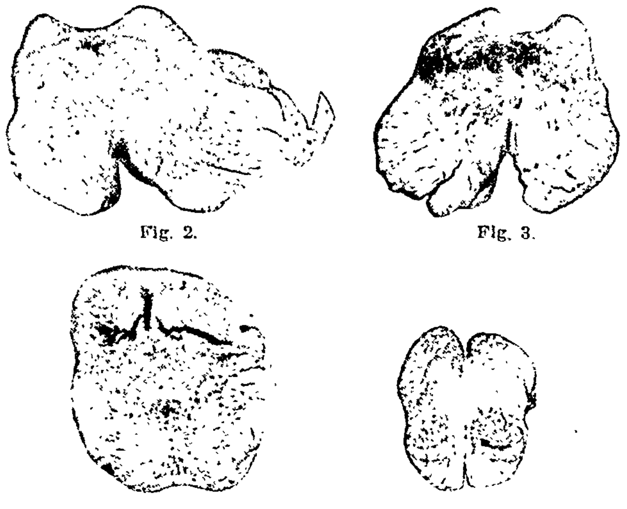
Fig. 2. Fig. 3.
Fig 4. Fig. 5.

Figs. 2, 3, 4 and 5.—The cerebral peduncle, pons and medulla (actual size). Antero-posterior diameter in each is increased and the tumor mass can be seen around the aqueduct of Sylvius and the fourth ventricle in the medulla, staining darkly.

While the growth involved the nucleus of the right fifth to considerable degree and to some extent the left, only the right masseter, temporal and pterygoids were weak.

At first the right facial nerve was involved in its whole distribution; that is, the patient was not able to show his teeth or wink his eye as well as he should, but later the weakness in the upper part of the face disappeared and there remained only the central type of facial palsy. This is difficult to explain, for, while Oppenheim[3] has described in tumors of the pons a weakness first of the central type which finally became peripheral, here we have just the opposite condition, in which at first the upper part of the face was involved as well as the lower, and later there was recovery of movement in the brow. Pathologically both nuclei were involved, the right distinctly more so, but not all of the cells were diseased, and it is possible that the recovery of power in the upper distribution can be explained by the fact that not all the cells were diseased and also that the cerebral fibers were not implicated.

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[2] Weisenburg, T. H.: Conjugate Deviation of the Eyes and Head and Disorders of the Associated Ocular Movements in Tumors and Other Lesions of the Cerebrum, The Journal A. M. A., March 23, 1907, xlviii, 1003, 1095.

[3] Oppenheim: Lehrbuch der Nervenkrankheiten, ed. 3.

Examination demonstrated a weakness in the palate and vocal cords; and all through his disease, but especially toward the end, the patient had difficulty in eating, talking and swallowing and dribbling of saliva. All these symptoms can be explained by the involvement of the nuclei in the medulla, although here, as in other nuclei, many of the cells escaped and there was not the weakness that was to be expected from the extent of the pathologic implication. It is also noticeable that there was no disturbance in respiration or in the action of the pulse. Records were kept daily for about a month before his death and observations were taken three times a day regularly.

The patient had some sensory symptoms, being able to appreciate objects better on the left than on the right. It must be remembered, however, that there was considerable involvement of the nucleus cuneatus and gracilis and parts of the median fillet in the pons.

No symptoms can be ascribed to the implication of the posterior limb of the internal capsule and the optic thalamus.

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ABSTRACT OF DISCUSSION

ON PAPERS BY DRS. SPILLER AND WEISENBURG

Dr. Max Nonne, Hamburg, Germany: It has been the generally received impression that the pulse rate in cerebellar tumors is lowered; but as I doubted by my own experiences the accuracy of this view, I spoke with some of the leading neurologists of Germany, asking their opinions on this subject: replies showed conclusively that, notwithstanding the traditional holding in this regard, the fact is that the pulse is as a rule normal in these cases, or if there is any change it is more often in the direction of acceleration. I should be very glad to learn the experience of American neurologists in this respect. The statements regarding it accord with my own experience.

I should like to call attention to one point in the diagnosis of tumors of the hypophysis, which for some reason has not been touched on, and that is the feminism which is often found in these cases. The voice resembles that of a woman or of an eunuch; the beard falls out, the hair on the genitalia disappears, the penis becomes shrunken and incapable of erection, while the testicles waste away. These symptoms are pointed out by all French and German authors as being of common occurrence in the cases in which the gland itself has been removed, and I have observed such a case clinically and microscopically. I should like a statement of the experience of American neurologists with reference to these symptoms.

Dr. B. Sachs, New York: Evidently Dr. Nonne's experience tallies well with the experience of the majority of us here. As for the occurrence of feminism of which he speaks in case of tumor of the pituitary body, I think we have seen less of it here than is recorded in Germany and France. But in one of the cases which I saw of hypophysis tumor there was distinctly that appearance presented. I believe every one would be struck with such noticeable symptoms as the disappearance of pubic hair, wasting of the genitalia, etc., and that the symptoms would surely have been recorded if present. Far from failing to make a diagnosis of tumor of the hypophysis, one may sometimes make the diagnosis of tumor of this gland when the tumor is elsewhere in the brain; I had an instance of that sort not long ago illustrating this point; a woman was brought into my hospital service when she was near death from brain tumor. She presented all the symptoms that we ordinarily associate with hypophysis tumor, including even a double exophthalmos and some changes indicating an acromegalic condition. An attempt was made to save what little vision was possible by an exploratory operation, but the woman was in poor condition and proved to be one of the few who succumb even to an exploratory operation. We found that the tumor did not involve the hypophysis, but was in the parietal region. So that in rare instances all hypophyseal symptoms may be considered to be secondary symptoms due to pressure on the hypophysis instead of being indicative of a tumor actually involving the substance of the hypophysis.

In connection with the subject of optic neuritis or papillary edema there are unquestionably some conditions difficult to explain. It is difficult to explain why in some cases the optic neuritis appears so early and in others so late, and the condition appears most variable in connection with gliomata. In a patient who was under my direct observation for six years and on whom I had an autopsy performed, during five and one-half years of that period of observation there had not been the slightest trace of any optic neuritis. This was not only the conclusion arising from my own examination, but a most competent oculist repeatedly examined the patient and never found a single trace of optic neuritis. Yet when this man died, having had his tumor for six years and with convulsive seizures as the only symptoms of the tumor, it was found that he had a glioma almost completely filling one hemisphere, and yet no optic neuritis had occurred. The only explanation one can give of those cases is that under slow conditions of growth certain parts of the brain, possibly the optic nerve and the chiasm, accommodate themselves readily to increasing pressure, and the disturbance of function is therefore not so great nor the anatomic distortion so great as one would suppose it likely to be.

In reference to Dr. Weisenburg's point as to whether there is a possibility of making a differential diagnosis between nystagmus due to cerebellar symptoms and nystagmus resulting from insufficiency of the oculomotor muscles: I think there is a difference. First, the nystagmus I have seen in connection with oculomotor palsies has not seemed to me to be quite so rhythmical as that peculiar and rather rapid nystagmus which occurs in connection with lesions of the cerebellum and which I have now learned to associate altogether with an involvement of the dentate nucleus. When I see that peculiar form of nystagmus I naturally conclude that it indicates involvement of the dentate nucleus. We note not only the rapidity and regularity of movement, but also the fact that it seems to be associated with either movement in one direction or another rather than a movement that would seem to imply a defective use of one set of muscles or the other. But I think that this is merely a personal impression, and I should be glad to know whether others have been able to make any further differentiation.

Dr. Julius Grinker, Chicago: In line with Dr. Nonne's observation of feminism in hypophysis tumor, I am reminded of a case of acromegaly, probably due to tumor of the hypophysis, in which feminism was a conspicuous feature. In that case there was also infantilism. The patient was a man of 50 with sexual organs of infantile dimensions. The psychical make-up was strongly feminine in type. I had one case in which, among other localizing signs, ataxia was present on the side in which the tumor was found. In that case there were, besides hypotonicity and adiocokinesis, signs which are mentioned as not frequently occurring in cerebellar tumor, but when present are considered of diagnostic value.

Dr. Theodore Diller, Pittsburg, Pa.: I believe that it is the generally accepted view that in tumors of the cerebellum optic neuritis occurs much more frequently and constantly than it does in tumors of the cerebrum. Recently, through the courtesy of my colleague, Dr. Mayer, I saw a patient under his care who exhibited symptoms of cerebellar tumor, projectile vomiting and marked cerebellar gait, but optic neuritis was absent. Dr. Mayer felt convinced that there was a tumor, and operation was done and a tumor the size of a hulled walnut was found. I ought perhaps to qualify my statement that there was no optic neuritis. There was a slight suspicion merely in one eye which the oculist thought might not be incompatible with a normal fundus.

Dr. Frank Woodbury, Philadelphia: What is the opinion of Drs. Spiller and Weisenburg of the relative frequency of the auditory phenomena in these cerebral tumors? Are auditory phenomena, such as tinnitus and hallucinations of hearing, common as compared with the ocular manifestations? In a case I studied a number of years ago the tinnitus was the most annoying and persistent symptom. The patient also had choked disc and optic neuritis with impaired vision and constant headache, but these symptoms were not so marked as the tinnitus, which the patient described as similar to blowing off steam from an engine, and declared it intolerable. At the postmortem a large growth was found behind the optic thalamus and projecting into the ventricle. It was decided that it was sarcoma and had followed a violent blow on the head some years before.

Dr. James D. Putnam, Boston: I think it would be the experience of all of us that the pulse is oftener fast than slow, although the contrary is occasionally seen, especially in tumors of rapid growth. With regard to the matter of the ataxia on one side in cerebellar cases, I recall an interesting confirmation of that fact, when the question was not of a tumor, but of an abscess of one side of the cerebellum; the ataxia was practically confined to one arm. I recall a case in which the pons at autopsy was found to be so soft that the greater part of it could be almost poured out, and yet within a few months the patient had been walking about the room and using both arms and legs fairly well.

Dr. Hugh T. Patrick, Chicago: I should like to confirm the opinion of Dr. Putnam that the rapid pulse in tumor is more frequent than the slow, except in rare instances. In fact, the other symptoms of tumor are so numerous and well pronounced that the pulse rate as a symptom of tumor may be neglected.

Dr. D'Orsay Hecht, Chicago: Almost all the references in regard to feminism in tumors of the hypophysis are to be found in the French and German literature. We have not recorded many observations on this point, although isolated case reports appear in some recent American contributions. Failure to include this phenomenon in my paper was rather a sin of commission for lack of time than one of omission.

Dr. M. Allen Starr, New York: I can confirm the statement of Dr. Nonne that slow pulse is a rather rare symptom in these cases. I can also confirm the existence of hemiataxia on the side of the tumor in three cases of cerebellar tumor that have come to autopsy and in which that symptom had been very marked. In a case which I saw with Dr. Herman Knapp of New York, in which for several months before her death the ataxia of the woman had been extreme on one side while it was not so on the other, the tumor was found on the side of the ataxia. I have seen confirmed feminism in two cases of hypophysis tumor accompanied by acromegaly. One patient was exhibited before the New York Neurological Society some years ago; the man, who had all the typical symptoms of acromegaly, confided to me subsequently (although he did not wish it known) that his sexual organs had practically withered and that he had lost his pubic hair. His mental type was markedly changed. I watched him for seven or eight years, and his make-up at the end of that time was wholly different from that at the beginning of the disease and would conform entirely to the term used by Dr. Nonne.

I have come to the conclusion (and I think it can be borne out by autopsy records) that the existence of choked disc is wholly dependent on the existence of an effusion into the ventricles of the brain. If there is effusion of fluid into the ventricles and generally a hydrocephalic condition there will be choked disc; without this effusion it will not be present. I have in mind a case of an intimate friend of mine, a boy who grew up with me, and whose mental characteristics I knew intimately, whom I watched through the course of a brain tumor for four years, in whom the diagnostic points of brain tumor were absent. The question was for a long time considered whether he had paresis. At the autopsy, which I made myself, it developed that the right frontal lobe up to the ascending frontal convolution was a mass of glioma. Yet that man had absolutely no choked disc up to the day of his death. He had occasional convulsions; he had no paralysis; there were many mental symptoms present. I have recently seen a patient with a rather extensive glioma of the occipital lobe involving the same distribution shown in one of the specimens passed, in which there was absolutely no choked disc whatever. The tumor, however, had not encroached on the posterior horn of the ventricle, and there was no distention of the ventricle. I think those of us who see many cases of brain tumor at autopsy will agree that if a tumor does not touch the ventricle, when it is a tumor of the hemisphere, or if it is located in such position as not to displace the cerebral axis, so as to cause stasis of fluid in the ventricles, it may exist for a long time without choked disc; but a very small tumor in such location as to interfere with the free exchange of fluid in the ventricles, for instance, underneath the corpora quadrigemina, will cause choked disc to appear early. The early appearance of choked disc is because the tumor interferes with the free passage of fluid through the ventricles and downward.

A point with regard to the diagnosis of the variety of tumor: I agree that in glioma there may be a preservation of many of the functions of the brain, although the glioma lies in a situation where one would expect them to be suspended. One common characteristic of glioma, as distinguished particularly from the harder tumors, is the great variability in the degree of the symptoms. These may be affected by applications of heat to the head or by hot foot baths. The variability of symptoms may be explained by the difference in the degree of the congestion of the tumor; we know that glioma is a very vascular tumor. Deafness on both sides is to my mind very rare indeed in any form of brain disease. I have one case to which I have already alluded, in New York, of bilateral sudden deafness from lesion of the pons, but I still believe it to be a unique case.

Dr. William G. Spiller, Philadelphia: We in America also believe, with Dr. Nonne, that papilledema is a very common sign of brain tumor; but occasionally and perhaps more frequently in glioma than in any other form of tumor, papilledema may entirely fail even to the last stage. The existence of the ataxia on the side of the tumor of the posterior cranial fossa has been demonstrated by numerous cases. The same is true of any lesion in this region.

A case was referred to in the discussion in which the symptoms lasted a very short time. A few years ago I saw a case with Dr. J. W. McConnell in which the first symptom of tumor developed six weeks before the man died. A glioma was found occupying almost one entire cerebral hemisphere.

Nystagmus caused by lesion of the third nucleus, to which Dr. Weisenburg has referred, is probably indistinguishable from that caused by a lesion of the cerebellum, owing to the close connection of the parts; but if the lesion be in the third nerve nystagmus so produced should be distinguished from that caused by a lesion of the cerebellum, as is that caused by a lesion in the sixth nerve when weakness but not complete paralysis of the right abducent muscle exists. The patient looks toward the right, but his eyeballs return because of the weakness, and repeated innervation of the weak muscle causes a jerky movement of the eyeballs resembling nystagmus.

Dr. T. H. Weisenburg, Philadelphia: I have not observed alterations in the pulse rate as a frequent symptom in brain tumor. In the case just reported in which there was great pressure, there being choked disc of 7 diopters, and in which the nuclei of the ninth and tenth nerves were partially involved, there were no variations of the pulse and respiration, although observations were made three times a day for a month before death. I have repeatedly had difficulty in differentiating nystagmus due to an ocular lesion from what I consider pure cerebellar nystagmus. In discuss this in my paper and think that often a greater nystagmus is described when looking to one side, it being ascribed to the fact that the lesion is on that side, when it is really a symptom of weakness of an ocular muscle.

In the present case there were no auditory hallucinations, but it is not at all infrequent to have such symptoms in cerebello-pontile tumors, especially in those which grow from the eighth nerve. I know of no reported cases in which auditory symptoms occurred as the result of involvement of the central auditory fibers.

THE ANTIBODIES IN TUBERCULOSIS AND THEIR RELATION TO TUBERCULIN INOCULATION AND VACCINATION *

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The antibodies of tuberculous patients have been studied by a number of investigators. Arloing discovered a means of obtaining a fluid homogeneous culture of tubercle bacilli. This rendered it possible for him, with Courmont,[1] to study the blood and exudates of tuberculous individuals for their agglutinating action on tubercle bacilli. They found that the serum of many tuberculous patients and the fluid in a large percentage of the cases of pleuritic exudation due to tuberculosis agglutinated tubercle bacilli. This test is termed the serum reaction for tuberculosis. It is said by Courmont to agree quite closely also in positive results with the tuberculin reactions obtained from individuals apparently not tuberculous.

Koch[2] studied the agglutinins of tuberculous serums by a modification of the Arloing[3] technic. He believed that a parallelism existed between the agglutinin content of the blood and immunity in tuberculosis.

Jürgens,[4] on the other hand, investigated the blood of tuberculous patients recovering spontaneously. He was unable to trace any association between their improvement and their quota of agglutinins.

After the discovery by Bordet and Gengou[5] of an indirect method for demonstrating the presence of antibodies by a process known as complement fixation, they applied this principle to the study of antibodies in the blood of guinea-pigs that had been inoculated with killed human tubercle bacilli. They employed an emulsion of tubercle bacilli as antigen and found that the serums of the inoculated animals contained an antibody that would unite with antigen and bind complement.

These complement-binding antibodies were investigated both in animals and in man by Wassermann and Bruck,[6] who used a modification of the Bordet method. They examined extracts of tuberculous tissue both from guinea-pigs and from man and were able to demonstrate that these extracts contained both tuberculin and an antibody, to which they gave the name antituberculin. They examined the blood of tuberculous patients and in 13 of them, who had not received tuberculin inoculations, were unable to find any [illegible] antibodies. On the other hand, th[illegible] blood of eleven tuberculous patients who were being treated with tuberculin contained antituberculin.

They observed that the first series of patients reacted strongly to tuberculin injections, but that the second failed to do so. They attributed the occurrence of the reaction in the first instance to the fact that there were no antibodies in the blood, and that as a consequence the tuberculin was attracted into the focus by the antituberculin existing there free; that as a result of these uniting, complement was taken up, and hyperemia, cell infiltration and softening of the focus resulted; and that as a result of this union the general reaction and local changes of the part occurred. They believed that where antibodies existed in the blood the injected tuberculin was neutralized and no reaction followed.

This theory of Wassermann and Bruck's as to the general and local reaction in the tuberculin inoculation did not seem to be fully sustained by the experimental evidence advanced by them, and was soon attacked by Weil and Nakayama.[7] The latter author's maintained that it was inconsistent that tuberculin antibodies and tuberculin should exist separately in a tuberculous focus at the same time with the former in such quantities as to attract circulating tuberculin. This contention alone, however, could not have great weight, because, as Wassermann pointed out, it is possible to find antigen and corresponding antibodies in the blood at the same time. Weil and Nakayama investigated the tuberculous organ extract as to antituberculin, and stated that they believed the complement-binding observed under these circumstances was due to a summation of less than inhibiting quantities each of tuberculin and tuberculous organ extract.

A substantiation of this latter point, which could but greatly compromise the value of the experimental proof deduced by Wassermann and Bruck in support of their theory, was soon forthcoming in the publication of Morgenroth and Rabinowitsch.[8] They reported that they were unable to find antituberculin in the blood of cases of tuberculosis treated with tuberculin; they were unable to note any difference between normal and tuberculous organ extracts as to their anticomplement action. They referred to the inhibiting action of Koch's old tuberculin alone. They agreed with Weil and Nakayama[7] as to the summation of a non-specific inhibition of hemolysis by organ extract and tuberculin. In view of their negative experimental findings, and from an elaborate argument, based on theoretical grounds, they believed the theory of Wassermann and Bruck as to the action of tuberculin to be unfounded.

Lüdke,[9] on the other hand, reported finding antituberculin in tuberculous organ extract, also in the serums of seventeen out of thirty-one cases of tuberculosis treated by tuberculin. He noted that those who had antibodies in their blood showed no or very slight reaction to tuberculin injections, while those who failed to show antibodies gave a marked reaction. He examined eight tuberculous patients before and after tuberculin treatment, and was able to demonstrate antibodies in seven of them, only after tuberculin treatment had been used. He noted, also, that he found antituberculin in few patients who had not had specific treatment. The results of his experiments were practically the same as those of Wassermann's and Bruck's.

Citron[10] examined a number of cases treated with tuberculin. In 6 of these, antibodies were not found and 5 of them reacted to tuberculin; of 8 cases, with the blood of which he obtained the complement-binding reaction, 6 failed to react to tuberculin. He and Wassermann had also observed antibodies in a case that had not received tuberculin treatment. Confirming Wassermann and Bruck's investigations, he concludes that antituberculin is, as a rule, not demonstrable in the

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Courmont: Lancet, London, 1908, ii, 1740.
[2] Koch: Deutsch. med. Wchnschr., 1901, xxvii, 829.
[3] Arloing: Compt. rend. Acad. d. sc., 1898, cxxvi, 1398.
[4] Jürgens: Ztschr. f. exper. Path. u. Therap., 1905, i, 569-602.
[5] Bordet and Gengou: Compt. rend. Acad. d. sc., 1903, cxxxvi, 351.
[6] Wassermann and Bruck: München. med. Wchnschr., 1906, liii, 2396.
[7] Weil and Nakayama: München. med. Wchnschr., 1906, liii, 1001.
[8] Morgenroth and Rabinowitsch: Deutsch. med. Wchnschr., 1907, xxxiii, 705.
[9] Lüdke: München med. Wchnschr., 1908, lv, 783, 856.
[10] Citron: Deutsch. med. Wchnschr., 1907, xxxiii, 1165.

serum of tuberculous patients, but that occasionally, owing to unknown causes, it may be found; that those patients who are treated systematically with tuberculin and who lose in the course of their treatment their original reaction for tuberculin, regularly show antibodies in their blood, on account of which he attributes the absence of reaction to tuberculin injections; that antibodies almost always fail in the serums of those tuberculous patients who still react to tuberculin; that in the latter cases the tuberculin that enters the circulation is abstracted from it by the antibodies present in the diseased focus, on account of which the local and general reaction result.

Christian and Rosenblat[11] have studied this question in animals. They observed that the serums of animals that had been immunized with tuberculin or infected with tuberculosis agglutinated tubercle bacilli. Under these conditions, however, they failed to find antituberculin. If the tuberculous guinea-pigs were injected with tuberculin, antibodies appeared in their blood; such guinea-pigs were found to be less resistant than those that had not been treated. If tuberculin injections were begun on the second day after infection, the pigs lived a couple of months longer than the control animals. They refer this lowered resistance in late employment of tuberculin injections to a negative phase and suggest that where it is possible, as it is in man, to bring them through to a positive phase, healing of the tuberculosis might result. They believe with Wassermann that the antituberculin bodies are produced in tuberculous tissue. In support of this they cite experiments in which many of the tuberculous glands of infected guinea-pigs were removed and thereafter a disappearance of antituberculin from the blood was observed.

Engel and Bauer[12] were unable to demonstrate complement-binding antibodies in the blood of tuberculous children before inoculations with tuberculin. With tuberculin treatment the antibodies were found quite uniformly increasing with the immunity of the child against larger doses of tuberculin.

Weil and Strauss[13] examined by the complement-deviation reaction the bloods of thirty-three patients with pulmonary tuberculosis who had been treated with tuberculin for several months. They concluded that the presence of antibodies in the blood did not go hand in hand with the disappearance of the tuberculin reaction, but, on the contrary, were most frequently found in those who reacted strongly to tuberculin injections. At the same time they did not believe that the hypersensitiveness to tuberculin was attributable to those antibodies. They believe that antibodies are present in tuberculosis because of the existence of a hypersensitiveness, anaphylaxis, and not because the latter is due to antibodies. They consider that the action of tuberculin, instead of being cleared up by the theory of Wassermann or by the bacteriolytic theory of Wolff-Eisner,[14] remains an unexplained phenomenon.

The hypersensitiveness to tuberculin, as exhibited by the skin reaction of Pirquet, was investigated by Czastka with relation to the complement-binding antibody content of the blood. Twenty tuberculous patients were examined, fourteen of whom had not been treated with tuberculin. In four of the latter antituberculin was found, three of these giving the tuberculin skin reaction. Seven of the remaining fourteen cases gave a positive Pirquet reaction. Of the seven patients treated with tuberculin, three showed antibodies in the blood. Two of these gave a positive Pirquet reaction on first vaccination, the third patient reacting slightly after the second vaccination. Of the other four cases not showing antibodies, three gave a positive result.

Czastka[15] concluded that complement-binding antibodies did not bear any relation to tuberculin treatment, or to the Pirquet reaction; that in view of the uncertainty that bacteriolysins exist against tubercle bacilli, and especially against heated bacterial fragments, the bacteriolytic theory of Wolff-Eisner was unfounded. Wolff-Eisner and Ascher observed that the majority of the tuberculous patients they examined showed complement deviation, and that it was impossible to trace any close relation between this and the results of the skin and conjunctival reactions. They questioned the specificity of the complement-binding reaction in tuberculosis, having found it in other infections.

Cohn[16] noted an absence of antibodies in the early stage of tuberculosis in 14 cases, but obtained a complement deviation reaction in 15 of 53 cases in the second and third stages of tuberculosis which had not been treated with tuberculin. He was unable to demonstrate tuberculin in the blood of patients with miliary tuberculosis, as reported by Lüdke and Bruck. He did not observe any relation to exist between the presence or absence of antibodies in the blood and the reaction of the patient either to tuberculin treatment or to general or local reactions from tuberculin.

In view of the evident uncertainties and the failure of agreement in the results presented by various observers concerning the complement-binding antibody and its relation to tuberculin reactions and tuberculin therapy, and recognizing the importance of the establishment of such a relationship, if possible, we examined a number of cases of tuberculosis with a view to investigating the complement-binding antibody content of the blood of patients who had not and of those who had received tuberculin inoculations and also to see if these antibodies bore any relation to the results of the tuberculin skin reaction. We have also ascertained the opsonic content of the blood in some of these cases with a view to determining its relation to the complement-deviation antibody and likewise its relation to the skin reaction.

The bacteriolytic theory of Wolff-Eisner concerning the skin and conjunctival reactions appears to be unsupported by any experimental evidence. Zieler[17] has recently shown that old tuberculin which has been completely freed from all tubercle bacilli fragments, provided any had existed in it, gives a stronger reaction, if any difference can be noted, than the old tuberculin not so treated. Also these reactions were obtained from material separated by dialysis from tubercle bacilli emulsion. Zieler found that the histologic changes of the skin in the Pirquet reaction were practically the same as those that follow infection with tubercle bacilli.

The technic employed in applying the complement-deviation reaction for antibodies in tuberculosis is the same as that used in demonstrating the complement-binding substances in syphilis, except that in tuberculosis old tuberculin, an emulsion of tubercle bacilli, or an extract of a tuberculous organ is used as antigen. Koch's old tuberculin is the most frequently used and apparently is the most satisfactory. The inhibiting properties of old tuberculin alone are very pronounced. On this point Morgenroth and Rabinowitsch lay much stress. We found, also, that sometimes small quantities of tuberculin would inhibit hemolysis. Cohn also has observed that smaller quantities sometimes inhibited more than larger in the test and mentions this as an argument against the contention of Weil and Nakayama that a positive specific complement-deviation reaction may occur through a summation of two non-specific inhibiting substances. The old tuberculin[18] employed by us in our examinations had to be used in smaller quantities than those reported by many authors. We found that 0.2 c.c. and sometimes 0.1 c.c. of old tuberculin strongly inhibted hemolysis, necessitating reduction of the amounts to 0.05, 0.025 and 0.0125 c.c.

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[11] Christian and Rosenblat: München. med. Wchnschr., 1908, lv, 2032.

[12] Engel and Bauer: München. med. Wchnschr., 1908, lv, 2273.

[13] Weil and Strauss: Wien. klin. Wchnschr., 1908, xxi, 1058.

[14] Wolff-Eisner and Ascher: Wien. klin. Wchnschr., 1908, xxi, 1299.

[15] Czastka: Wien. klin. Wchnschr., 1908, xxi, 877.

[16] Cohn: Berl. klin. Wchnschr., 1908, xlv, 1309.

[17] Zieler: München. med. Wchnschr., 1908, lv, 1685.

Tuberculous serums, as well as the serums of many normal and diseased individuals, sometimes inhibit hemolysis alone, which likewise often requires the amount of serum used to be reduced; on the other hand, occasionally a larger quantity of serum may not exert this inhibiting action because of its possessing amboceptor for sheep's corpuscles.

The protocol of an examination of a tuberculous serum giving a positive reaction would read as follows:

Antigen.	Serum.	Guinea-Pig Serum.	Rabbit Serum.	Sheep Corpuscles Emulsion, 5 Per Cent.	Result Hemolysis.
0.05	0.1	0.1	0.002	1	No
0.05	0.2	0.1	0.002	1	No
0.025	0.1	0.1	0.002	1	No
0.025	0.2	0.1	0.002	1	No
0.05	...	0.1	0.002	1	Yes
0.025	...	0.1	0.002	1	Yes
.....	0.4	0.1	0.002	1	Yes

In each test, control serums of normal individuals are included and put through the same series of examinations as the tuberculous serums. We have not infrequently seen a considerable binding of complement with a serum from an apparent normal.

The cases herewith reported were cases of pulmonary tuberculosis in the second and third stages.

TABLE OF COMPLEMENT-DEVIATION REACTIONS IN TUBERCULOSIS

Case. No.	Complement Deviation Test.	Opsonic Index.	Pirquet Reaction.	Treatment Tuberculin. T. R.
38	+	1.32	+	Yes
39	..	0.56	+	Yes
40	..	0.17	+	Yes
42	..	0.73	..	Yes
43	+	0.51	+	Yes
44	+	0.76	+	Yes
51	+	0.8	..	Yes
45	..	0.99	..	No
46	+	0.76	..	No
47	+	0.88	..	No
71	+	0.98	+	No
72	..	0.69	+	No
73	..	0.3	+	No

Of five cases of tuberculous joint and bone disease, two gave a positive complement-deviation reaction. None of the patients received tuberculin. The patients who were being treated with tuberculin were examined on the day they received their injections. As they were receiving injections twice a week the blood examinations would come on a day that would correspond to a high tide of immunity in the opsonic sense. This point is of importance, as we have learned from a study of opsonins that in the interim of inoculations a negative and positive phase, with regard to index can usually be made out, and various antibodies usually increase at the same time. All but five of the patients examined by us had pulmonary tuberculosis. It is not always possible in such cases to secure from inoculations the negative and positive undulations, because of the factor of auto-inoculations. In the few cases in which we made a single record it will be observed that in only one was the index found above normal. In regard to the complement-binding antibodies of the blood of patients treated with tuberculin and those not so treated, we found that 4 out of 7 who were treated with tuberculin and 3 out of 6 who were not receiving tuberculin gave the reaction. Of the tuberculin-treated cases, three of four that gave the complement-deviation test gave a positive Pirquet reaction, and in one of the latter the opsonic index was above normal. Of the untreated cases, one of the three that had complement-binding antibodies gave a positive skin reaction. Of three of the untreated cases that did not show antibodies, two gave a positive skin test.

CONCLUSIONS

As a result of our work, we believe the following conclusions justified:

No relation exists (first) between the complement-binding antibody and tuberculin inoculations and vaccinations; (second) between the complement-binding antibody and the opsonic index; or (third) between the opsonic index and the tuberculin skin reaction.

Not only have our examinations failed to show any relation between tuberculin antibodies and tuberculin reactions and inoculations, but, *on account of observing* occasionally an inhibition of hemolysis with normal serums, we are strongly inclined to believe that the complement-binding reaction is not specific for tuberculosis.

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OLIVE-OIL FOR POSTANESTHETIC NAUSEA*

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It has been shown in work soon to be published that fats and other ether-soluble substances, when introduced into the alimentary tract of individuals subjected to ether anesthesia, are capable of restoring to the blood certain properties which are inhibited by the action of the drug, viz.: those concerned with the phenomena of phagocytosis. With the idea in mind that other effects of ether, such as nausea and vomiting—whether these be due to a local irritating action of the drug on the gastric mucosa or to a more general action elsewhere—might also be influenced by the introduction of a fat, such as olive-oil, into the stomach, in a series of cases, patients were given olive-oil by mouth immediately after partial restoration of consciousness following an ether anesthesia. Up to this time thirty patients in all have been treated in this manner. The results have been striking. In certain of the cases nausea failed to occur at any time. In a second group in which nausea had begun prior to the administration of the oil it was immediately checked by this treatment. In only one of the thirty cases was nausea observed after giving the oil. In this case consciousness had been regained, and nausea and vomiting had set in. One ounce (30 c.c.) of olive-oil was then given by mouth. Almost immediately the patient remarked on the "soothing" sensation produced by the oil. Nausea and vomiting ceased and remained absent for ten hours, at the end of which time there was a return of the symptoms in a mild form. The cases chosen were all simple, so-called "clean," surgical cases in which the probability was strong that such nausea as

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[18] The old tuberculin was received from the experimental department of Parke, Davis and Company.

* A Preliminary Report from the Department of Surgery, Rush Medical College.

Clinically such conclusions are based largely on the frequent occurrence of intestinal lesions in artificially fed infants, but the direct proof of this route of infection naturally rests on animal experiments.

Chauveau,[1] who was the first to demonstrate the infectivity of the human bacillus for cattle clearly proved this method of infection, as did later Nocard,[2] Tjaden[3] and Cipollina,[4] by using kittens, young pigs and monkeys as well as cattle in their feeding experiments.

The still further disputed question of whether a lesion of the intestinal mucosa is necessary for infection by this channel has also been approached in a similar manner. Dorbroklonski[5] introduced cultures of tubercle bacilli into the stomach of normal guinea-pigs, and from a most careful microscopic as well as macroscopic examination of the entire digestive tract concluded that living bacilli were capable of passing through the perfectly normal intestinal mucosa of guinea-pigs and that no lesion of any description was necessary. Similarly Ravenel[6] was able to recover virulent bacilli from the chyle of previously healthy dogs fed with cultures mixed with melted butter as early as three and one-half to four hours after feeding.

From these and various similar experiments it would appear undoubtedly that not only is the intestine frequently the portal of entrance for the bacilli, but that in the lower animals, at least, infection may occur through a perfectly normal intestinal mucous membrane.

In man, however, this is particularly difficult to demonstrate because at autopsy there is most frequently present either, on the one hand, an advanced stage of the disease with multiplicity of lesions which makes it impossible to detect with certainty the primary source of infection or, on the other hand, a rapidly fatal process confined to the lungs alone.

The findings in the present case noted in a routine post-mortem examination under circumstances which rendered a particularly careful examination of the parts affected necessary are of interest from the fact that, while the conditions noted arose in a wholly natural manner, they resemble those produced in the experiments quoted and bear closely on the results.

Subject of Examination.—This was a colored man, aged 32, a patient of the State Hospital at Trenton for three years previous to his death. He was a general paretic, dull, stupid and much deteriorated, and untidy and filthy in his habits. He was placed in a ward occupied by other negroes, many of whom were similar in general behavior. His mental condition and habits offered excellent opportunity for infection by the intestinal tract. His last illness was cardiac weakness from chronic myocarditis. There was no loss of weight or other suggestion of any constitutional disorder.

Autopsy.—Examination of the thorax showed the pericardium and pleuræ to be normal. The heart muscle was the seat of atrophic and interstitial changes. The lungs were both considerably engorged and the dependent parts showed some partial lobular consolidation. No nodules, pleural scars or thickenings were present. There was no macroscopic indications of tuberculosis and the peribronchial glands were not unusual. The general abdominal cavity was likewise negative. Both the parietal and visceral peritoneum was free from adhesions or exudate. The liver and kidneys were affected with early interstitial changes.

The pancreas, adrenals, bladder and prostate showed nothing abnormal.

For the reason that, at the time the autopsy was made, an outbreak of typhoid fever was feared in the institution, an unsuspected case having been discovered at autopsy shortly before, special attention was given to the intestinal tract, spleen and mesenteric lymph-glands. The latter in the region of the lower three feet of the ileum were greatly enlarged, about six or eight of the glands being as large as walnuts; others were about the size of a pea, and a few similarly enlarged glands were found at the root of the mesentery.

Typhoid was immediately suspected, although the spleen was quite small and firm, and the intestine was most closely examined, both externally and internally, for any variety of lesions.

Practically nothing was found. The mucosa of the duodenum, jejunum and large intestine showed indefinite areas of blood stasis only.

The mucosa of the ileum was smooth and pale throughout; there was not the slightest indications of injection, erosion, ulceration or enlargement of Peyer's patches or solitary follicles. The serous coat everywhere appeared normal.

A careful examination of a smear preparation from an enlarged mesenteric gland showed tubercle bacilli in limited numbers and a large part of the ileum opposite the affected lymphatics was saved for microscopic examination. The other organs, including the brain, heart, lungs, kidneys, pancreas, adrenals, and lymph-nodes, were examined microscopically.

Cultures on agar were taken from the liver, spleen, bile and mesenteric glands; colon bacilli only were found.

Microscopic examination of the pancreas, adrenals, liver and kidneys showed no lesion of importance in connection with the special findings. There was a moderate grade of chronic interstitial overgrowth in liver and kidneys, but no indication of tubercle formation.

Sections from all of the more suspicious looking areas of the lungs showed merely an engorgement and edema with a moderate cellular alveolar exudate; an early simple broncho-pneumonia incidental to the cardiac condition without any special characteristics.

A satisfactory examination of the intestine was possible, the autopsy being performed only two and one-half hours after death. Extended examination of sections from the ileum at different levels along the lower third, including the entire circumference, showed the mucous membrane to be the seat of early post-mortem alteration, but entirely free from erosion or ulceration. No indication of infiltration or hyperplasia was found in the submucous lymphoid tissue or follicles. The intestinal findings were pronounced negative only after prolonged search.

Two organs contained tuberculous lesions, the spleen and mesenteric glands. In the latter the process was fairly well advanced, the largest glands showing massive central coagulation necrosis with very little unaffected tissue remaining; the smaller glands showed numerous giant cells and scattered solitary tubercles in which tubercle bacilli were demonstrable after alcohol fixation.

The spleen, though macroscopically negative, showed a condition somewhat similar to that in the more slightly affected lymph-nodes, though even less advanced.

Scattered through the pulp were fairly numerous incipient tuberculous foci, represented by small collections of epithelioid cells, with an occasional giant cell or minute area of necrosis. The number of lesions was considerably greater proportionately than the apparent age of even the more advanced individual tubercles. The lesions in the spleen suggested a very recent but rather severe infection. As before indicated, no lesions in any way suspicious of tuberculosis were found elsewhere.

Notwithstanding the fact that no lesions, tuberculous or otherwise, were found in the intestine, the case is regarded as one of primary infection through this organ.

It is realized that tuberculosis of the mesenteric glands *per se* is not necessarily an indication that the channel of infection was the intestine, and that these are not only frequently but commonly infected in processes of a general nature.

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[1] Chauveau: Compt. rend. et mém. du Cong. p. l'étude de la tuberc. chez l'homme et chez les animaux, Paris, 1891, p. 51.

[2] Nocard: Schweiz. Arch. f. Thierh., September, 1902.

[3] Tjaden: Centralbl. f. Bakteriol., February, 1903.

[4] Cipollina: Berl. klin. Wchnschr., Feb. 23, 1903.

[5] Dobroklonski: Arch. de méd. expér. et d'anat. path., Paris, 1893, Series 7, ii, 233.

[6] Ravenel: Pub. Health Reports and Papers, Am. Pub. Health Assn, Columbus, 1904, xxix, 404.

On the other hand, it is certainly a recognized characteristic of tuberculous infection generally that involvement of the regional lymphatics is the best guide to the original point of infection; and this applies more particularly to cases such as the present, in which the infection is recent and the areas limited.

This view is based not merely on human autopsy findings, which in themselves are sufficiently numerous to support the view, but on exact experimental methods as well.

Among the investigations in human subjects may be mentioned the work of Heller,[7] who, in order to approach the question of primary intestinal tuberculosis, examined the bodies of 714 persons dead of diphtheria, and based his opinion that about 31 per cent. of the tuberculosis found was primarily intestinal on the tuberculous condition of the mesenteric glands.

On the experimental side, among others, are the works of Tjaden[8] and Schottelius,[9] who in all their animals fed with tuberculous material found a marked tuberculous mesenteric adenitis as well as larger lesions of the lungs, pleura and other viscera.

Schroeder and Cotton[10] considered that the mesenteric tuberculosis found in a calf subcutaneously inoculated with tubercle bacilli (a severe tuberculous bacteriemia) was due either to direct transmission of infection from the seat of inoculation or from bacilli coughed up from the lung and swallowed. In this animal the lungs were heavily infected.

If in the examples quoted the conclusions relative to intestinal and mesenteric lymph-gland infections can be accepted, certainly in the present case, in which no tuberculous foci, however small, were found either in lungs, bronchial glands or other organs which might create doubt, the assertion that the infection entered through the unaltered intestinal mucosa and first manifested itself in the regional lymphatics may be accepted, the only alternative being that the case was of the type of *typho-bacillose* of Landouzy,[11] which from both the clinical history and post-mortem findings seems extremely unlikely.

Two points are worthy of emphasis:

1. An unquestionable instance of primary tuberculous infection through the intestine in an adult individual, as shown by the marked foci in the regional lymphatics.
2. The passage of active tubercle bacilli through an intestinal mucosa which to both macroscopic and microscopic examination showed no trace of a demonstrable lesion.

The presence of multiple additional foci in the spleen indicates the manner in which the infection was progressing; had the disease been allowed to continue its course it would have doubtless terminated in a diffuse miliary tuberculosis without definite suggestion of the primary source of infection. But, as previously stated, the purely accidental discovery of the condition at the exact stage when of sufficient duration to make perfectly clear the process without obscuring the true significance gives to the case the definiteness of experimental observations along similar lines, and offers a demonstrable proof and natural illustration of what must be of frequent occurrence, though seldom capable of so direct demonstration, in man.

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[7] Heller: München. med. Wchnschr., April 15, 1902.
[8] Tjaden: Deutsch. Vrtljschr. f. öff. Gsndhtspflg., xxxiv, No. 3.
[9] Schottelius: München. med. Wchnschr., Sept. 30, 1902.
[10] Schroeder and Cotton: Bull. 93, Bureau of Animal Industry.
[11] Landouzy: International Congress of Tuberculosis, Washington, D. C., 1908; abstr. in THE JOURNAL A. M. A., Oct. 17, 1908, ii, 1359.

RECENT FINDINGS REGARDING THE DISTURBING ELEMENTS IN MILK FOR INFANTS *

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The editions for 1909 of Holt's "Pediatrics" in this country and of Still's "Diseases of Children" in England, together with the current literature, give no evidence, so far as I can find, of any change in the commonly accepted opinion that it is the excess and the inadaptability of the casein in cow's milk and the low percentage of fat that cause the chief inherent difficulties in the administration of milk. Likewise there is no change from the belief that the sugar of cow's milk creates no disturbance, especially if the percentage be increased by the addition of cane-sugar or milk-sugar to a point approximating the amount contained in human milk. Koplik refers to the fact that the salts of cow's milk, chiefly lime and potassium, are not well assimilated, fully 34 per cent. being excreted.

So the recent studies in Germany must be regarded as revolutionary, and perhaps evolutionary, since they regard the casein of cow's milk as perfectly harmless and place the responsibility for the digestive difficulties on the salts, sugar and in some conditions the fat (the latter being the chief cause in the exudative diathesis and those diseases described as "dyspepsie" and "decomposition.") During the last few years Professor Finkelstein and his colleagues, Myer and Rosenstern, have been carrying on investigations at the Berlin Kinderasyl, probably the largest hospital for infants in the world, studying the metabolism and pathology of infant-feeding. Their findings are, in the main, accepted by most of the pediatrists of Germany, and have been confirmed by some of the other investigators. It is to the kindness of those in charge at the Kinderasyl that I am indebted for the privilege of seeing the work being done on this subject.

REGARDING THE SALTS OF COW'S MILK

The salts of cow's milk which are of importance are sodium, calcium, potassium and magnesium chlorids, and they are three and one-half times as abundant as in human milk. In contradistinction to the salts in human milk, they frequently act as a direct poison to the child, even when reduced to the same or lower percentage found in breast-milk. Sodium chlorid in physiologic solution has been proved by Finkelstein to be a poison to sucklings when given internally. Intravenous injection of the same causes fever, acting, it is supposed, directly on the heat centers. The salts of cow's milk have been proved experimentally to react badly on the baby on account of the antagonism between the sodium and the calcium. The salts of the milk most easily taken care of by the infant are the calcium chlorid and magnesium chlorid in combination. The potassium chlorid and the sodium chlorid are antagonistic. Infants of suckling age react more to salts than older children. If sodium chlorid is given a clinical reaction occurs, marked by a slight rise in weight, while with the calcium chlorid a decrease in weight occurs. If 100 grams sodium chlorid solution is given internally the temperature goes up to 104 F. in from four to six hours. The calcium salts alone give a subnormal temperature, but when combined with sodium chlorid a rise of temperature results, and is thought to be from an antagonistic combination of the sodium and calcium which is unfitted to the child's digestion and acts as a poison. Sixty per cent. of the bottle-fed infants in Germany have a tendency to convulsions, a condition called spasmophilia. This is manifested by an oversensitiveness in the electrical reactions, an overexcitability to the open cathode pole. When the infant reacts to less than five milliampères, the pathologic condition of spasmophilia exists. Experiments with the various elements of cow's milk have been made. When casein or fat or sugar alone are given, no electrical overexcitability appears, but when the salts of the milk are fed the infant reacts to less than five milliampères. Other manifestations of spasmophilia appear in the salt-susceptible infant, such as the facial phenomenon (Chvostek's) and Trousseau's symptom of spastic contraction of the hand, all of which disappear when the food is salt-free.

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* Read before the Jackson County Medical Society, Oct. 19, 1909.

SUGAR DISTURBANCE

A distinct clinical type of infantile disturbance has been investigated and described by Finkelstein[1] under the name of sugar intoxication. The condition is not an intestinal infection, but depends on the presence in the food of the sugar of cow's milk and its intolerance by certain infants. The elimination of the sugar causes the disappearance of the symptoms and a return to health. The sicker the child the less sugar required, it has been shown experimentally, to cause the acute condition. Infants suffering from the various stages of intestinal and nutritional disturbances leading up to marasmus are more susceptible to sugar intoxication, and they react with an elevation of temperature when sugar alone or milk containing sugar is given. The other symptoms are made constantly worse, and we find the infant presenting the following:

1. A general appearance of collapse.
2. A sort of coma, lasting a minute, resembling in some ways a meningitis. The child pays no attention to surroundings and sleeps all of the time, appearing benumbed.
3. A sudden drop in the weight.
4. Fever. This is always present, irregular, but comes up suddenly as high as 104 to 105.8 F.
5. A leucocytosis of from 25,000 to 60,000.
6. Sugar always present in the urine. It is an alimentary glycosuria, due to inability of the blood to oxidize the sugar.
7. Changes in the character of respiration. It becomes coma-like, irregular, but with a characteristic lengthening.
8. Diarrhea with green fermented stools, as many as eight daily.
9. Albumin in urine. There is no acidosis or butyric acid, as is found in diabetes. The sugar acts in these cases as a direct intestinal poison and as the cause of the series of symptoms.

The administration of weak tea and water and the withdrawal of all sugar will cause a prompt disappearance in twenty-four hours of all the symptoms in the milder cases, the severer cases requiring longer; then small feedings of breast-milk should be given for fourteen days, or, if the child is bottle-fed, no sugar should be given until the end of that period. Malt-sugar is found to be better tolerated in these cases than cane-sugar. Milk-sugar is the least tolerated, and in general has the least influence on body growth.

SUMMARY

The following points are proved:

1. The salts of cow's milk have a pathologic influence on the infant, causing a condition of spasmophilia or tendency to convulsions, which may go to a spasm of the glottis, tetany or an eclampsia. The treatment consists simply in feeding for a period with a salt-free diet.
2. The sugar of cow's milk is not tolerated by some infants, acting as a poison and causing a distinct symptomatology, a condition called sugar intoxication, which disappears promptly on the elimination of sugar from the food. It is also associated at times with those disturbances, the most extreme of which is marasmus, in which the infant has an intolerance for fat. The hunger-cure is practiced in these conditions, either the sugar or the fat or both being eliminated from the milk until the symptoms have improved.

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SODIUM NITRITE IN BRONCHIAL ASTHMA

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Few pictures of human suffering have so stirred up the pity and despair of the physician and demonstrated a single shortcoming of therapeutics as have obstinate attacks of bronchial asthma. What a boon to both patient and doctor would be a drug to relieve the spasm of the bronchial muscles! The narcotic agents used for this purpose—morphin and chloral—are not suitable for frequent use and are not always reliable. Potassium iodid is not often efficient. The ordinary antispasmodics are impotent. Inhalation of the smoke of potassium nitrate, stramonium, etc., often fail to bring relief and are detrimental because they irritate the bronchial mucous membrane. Amyl nitrite and nitroglycerin often give some relief, but their effect is fugacious.

I recently attended a patient who had been afflicted with asthma for forty-six years. His last attack was complicated with a coryza and trachitis and a very severe laryngitis. I treated the combined conditions for about ten days with various drugs and produced some improvement in the inflammations, but scarcely any improvement in the breathing. It then occurred to me to try sodium nitrite. I administered one grain of it by mouth, and in about half an hour the dyspnea diminished and the radial artery, which had been contracted, became somewhat relaxed. Two hours after the first dose the patient received another grain, and in about half an hour he was breathing naturally and the pulse was soft. Thereafter the patient took one grain of the sodium nitrite about every two and one-half or three hours for two days, and then the intervals were gradually increased until, after about a week, he limited the use of the medicine to one dose at bedtime, and thus continued it for several days. As soon as the sodium nitrite relieved the spasm I began to treat the patient's nervous system. The asthma did not recur, but the laryngitis long persisted.

Another recent case of bronchial asthma occurred in a man 64 years of age who had had the disease since youth. When called, I found the patient sitting bent far forward, his elbows resting on his knees. Every act of respiration was performed with the greatest muscular effort and by a slight rhythmical raising and lowering of the body. The patient's face expressed helplessness and weariness from effort, lack of sleep and the impossibility of eating. His pulse was tense. He had been taking medicines without the slightest benefit. I gave him one grain of sodium nitrite and after about half an hour there was slight improvement. One hour after the first dose I gave a second one, and about half an hour after it the patient was very much relieved. He continued to wheeze slightly, but he could breathe with considerable ease and could rest against the back of his chair. He began to yawn and soon fell asleep. He continued for a few days to take one grain of the drug every two or two and one-half hours and enjoyed comfort about the house and on the street. I saw him a week after my first call and he told me that he was taking occasional doses of the drug. He then passed from my observation. I gave him also constitutional treatment, for asthma is primarily a nervous affection which may be started by numerous stimuli of discomfort.

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[1] Monographs by Finkelstein and his assistants may be found in the Berlin Jahrbuch für Kinderheilkunde during the past two years.

In the severe cases of asthma the initial dose of sodium nitrite should probably be two grains by mouth. The drug may be given hypodermically when dyspnea is severe. It is a remedy of marked action on unstriped muscle and should be given with discretion. The limit of dosage is indicated usually by a feeling of distention of the head and then headache.

RECURRENT VOMITING WITH ACETONURIA

REPORT OF TWO CASES

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The occurrence of two cases of recurrent vomiting in members of the same family, a brother and sister, is my apology for offering the following report:

Case 1.—The elder of the patients is a boy of 7, rather small, as his parents are, but active and vigorous, though of a distinctly neurotic disposition. He was delivered at term by instruments, and nursed for six weeks with poor success. From that time on he passed through the hands of various physicians, who tried in vain to find a suitable milk modification. During this time he was constantly subject to vomiting, colic and indigestion. Measles and whooping-cough have been his only other sicknesses. The mother, who is a keen observer, thinks that the child has always had this type of vomiting, because of its severity and associated prostration. It was not until the boy was in his fifth year, however, that acetone and diacetic acid were first demonstrated in the urine, and a correct diagnosis established. Since this time the patient has been seen in some ten attacks, though he has had many others, and at these times acetone has always been detected on the breath and in the urine. Recurrence has taken place in from five weeks to five months, and attacks have usually lasted four or five days, being attended by almost constant vomiting, marked emaciation, and prostration. During the last nine months he has had only three attacks, but one in the summer, of marked severity, was accompanied by considerable hematemesis. As the child grows older, attacks are becoming less frequent and according to the usual progress of such cases, should cease within a year or more.

Case 2.—The sister of the first patient is now 3 years and 9 months old, and is of the same type as her brother—small, thin, active, and neurotic. She was born without instruments and nursed for nine months, with occasional substitute cow's milk feedings. She suffered less from vomiting and indigestion than her brother did, but experienced considerable difficulty when put on cow's milk entirely. It was then found that her capacity for fat was decidedly limited, and it was a number of months before she could take whole milk. Like her brother, she has had measles and whooping-cough. At about a year and a half she had her first attack of severe vomiting, which was accompanied by acetonuria. Since then she has had four recurrences, all associated with prostration, moderate emaciation, and the presence of acetone and diacetic acid in the urine. It is noticeable that these attacks are not as yet so severe as those of her brother, though it is possible that they may be as the child grows older. During the last recurrence, which was of recent date, the vomiting was of only moderate severity, but more stupor than usual developed, and delirium, lasting for about an hour, made its first appearance. In prognosticating the future of this case, it would seem probable that the child will follow a course similar to that of her brother, inasmuch as ordinary methods of treatment, diet, and hygiene seem to have little effect on the course of the disease.

139 Park Street.

Therapeutics

CHOREA

The condition to which this name is applied is so little understood that Dr. George Montague Swift's discussion of it in the *American Journal of the Medical Sciences*, for September, 1909, should attract special attention. He declares chorea, i. e., incoordinate, involuntary muscular movements, to be a symptom and not a disease. Also asserts that large doses of arsenic are dangerous. Swift has seen from the arsenical treatment of chorea hemorrhage from the stomach, hemorrhage from the kidneys, severe irritation of the conjunctivæ, and neuritis. It is no uncommon thing to see tedious gastrointestinal inflammation and albuminuria, showing kidney irritation, from large doses of arsenic. Serious anemia can also be caused by pushing arsenic, and neuritis, even general multiple neuritis, may be caused by the misuse of this drug.

Swift believes chorea to be a symptom of several kinds of cerebral irritations, and he divides the causes, in children, into two principal classes. In Class 1 the symptom of chorea is caused by too great mental and physical activity, and consequently mental tire. In Class 2 the cause of the symptom of chorea is an infection.

Class 1 is probably the larger class, and the muscle contractions and incoordinate movements are a symptom of debility caused perhaps by a severe illness, or more frequently by overwork in school or at home, in the endeavor of parents to push their young girls, especially, to acquire quickly various accomplishments, added perhaps to the fad of the age for an undue amount of physical exercise. In other words, the young girls, and the boys also, have but few periods of rest, and hasten, as do business men and society women, from one appointment and occupation, pleasure, exercise or function to another, as rapidly as possible. Even in the home something is doing every minute. Soon these poor tired children begin to eat insufficiently, do not sleep well, and become anemic and chlorotic.

Even very young children, babies, have too much done for them, are amused too much, talked to too much, played with too much, and, as Swift says, are walked too much. The result is nervous exhaustion. There may be tantrums and explosions of temper, but all represent brain and nerve tire, and the choreic movements are but symptoms of this condition.

Swift puts such patients "to bed in a quiet room, relieves their anxieties," aids sleep, if necessary, and "stuffs" the patients with nutritious food. He administers iron, bone marrow, fats, and cod-liver oil, if advisable. If the choreic movements are sufficient to cause restlessness and prevent the child from sleeping, he gives, temporarily, sedatives, as "bromids, codein, and trional or veronal" sodium. Just as soon, however, as there is some improvement he sends the patient into the country or to the seashore for fresh air and quiet.

There is no question of the advantage of the fresh air and rest cure for these patients; in fact, it is often best to move them, even though quite ill, and the seashore and the sea breezes are probably better than country air for them. All the various addenda to the rest cure for neurasthenia should be taken advantage of as soon as possible, viz.: warm, non-stimulating baths, massage, and later graded simple physical exercises.

Swift's second class of causes of choreic movements is the class due to infections, which may be "rheumatic, malarial, pneumococcic, or typhoid." He well says that since there are probably several varieties of germs which cause rheumatic affections, there are probably several varieties of these rheumatic germs that cause a development of choreic movements. Such infections, especially the rheumatic infections, predispose to endocarditis and even pericarditis. These infections may cause sufficient anemia, malnutrition and irritation of the nervous centers to account for the muscle contractions. The endocarditis develops slowly in these cases and should be carefully watched for, and Swift thinks that a weakened heart from these infections can become suddenly dilated by any severe muscle exercise, and even by a severe nervous strain, as by a tantrum.

In these patients, of course, rest in bed is imperative. The medicinal treatment depends on the germ that is infecting the patient. All channels of entrance of infection should be removed as soon as possible, such as "diseased tonsils, postnasal adenoids, and decayed and decaying teeth." Gastrointestinal fermentation should be prevented.

It is probable that the germs that cause rheumatism and the chorea of infection may enter the blood not only through the tonsils, but often through the intestines, and the drugs found most advantageous in stopping the disease of rheumatism and the so-called disease of chorea, such as salicylic acid in the first instance and arsenic in the second instance, are those that act as intestinal antiseptics, and many times apparently a course of chorea may be shortened with salicylates as well as with arsenic, and with much greater safety.

The seriousness of chorea in its ability to injure and change the mental health of the child, even perhaps impairing its future, should cause parents and physicians to be ever on the alert to forestall the incidence of the condition. All brain tire should be prevented, and the moment that a child is found not to sleep well, not to eat well, and to become pale should be the moment that rest and proper treatment is inaugurated.

The severe form of chorea, so-called chorea major, in which the movements are so constant as to exhaust the patient and to cause death, is probably due to septic conditions and malignant endocarditis. Fortunately this form of chorea is rare. The child must be given rest, even if it requires very large doses of chloral, and the other treatment is that of septic poisoning. The blood should be examined for bacteria, and if possible the proper antitoxin administered.

PULMONARY TUBERCULOSIS

In spite of all that has been said on the subject of diagnosing and treating this disease in its incipiency, the statistics of sanatoria for tuberculosis, and the continued frequency with which patients, who have been neglected, come to the lung specialist, call for continued comment and discussion.

Not more than one-third, and often less than one-fourth, of patients received at sanatoria have the disease in its incipiency. This is statistical proof of either a lack of diagnosis or the desire of physicians to make the attempt to cure patients outside of an institution. As most of these institutions are charitable, and therefore are expected to treat and care for patients only who need charity, the hardship on the physician from sending a patient to an institution, as soon as he discovers that the patient has the disease, cannot be great.

It is not the purpose of this article to urge that a patient be sent to an institution who can pay his physician for his services, who can be at rest more or less constantly in the open air in a location removed from a city's dust and smoke, who can receive the proper kind of food, and who will not be fretted by household worries and ill-judged and tiresome visits from friends. It is the object of this article to urge that when all these advantages cannot be offered a patient, he be sent to an institution equipped and properly located for the treatment of this disease, and be sent to such an institution before his lungs have become seriously affected.

The advantages of a sanatorium in the treatment of this disease, from the standpoint of rest alone, are just as great as are the "rest" advantages in a sanatorium for the treatment of neurasthenia.

When 50 per cent. of all patients received at the best sanatoria, even including those in the more advanced stages, have the disease arrested and are able to return to their occupations and usual life, and when from 75 to 80 per cent. of incipient pulmonary tuberculosis patients are able to leave institutions with the disease arrested and able to work, there can be little excuse for not sending patients with incipient tuberculosis to sanatoria.

No one will assert but that a certain number of these patients will have a recurrence of the disease, but the fact that the disease is arrested at all in such a large number of patients, when properly treated in sanatoria, is little less than miraculous when the disease is viewed from the standpoint of even twenty-five years ago.

It is not necessary to enumerate the early signs and symptoms of pulmonary tuberculosis, but a few suggestions expressed by Dr. Henry F. Stoll, of Hartford, Conn. (*Yale Medical Journal,* March, 1909) will be of value.

A patient who shows debility, unless a satisfactory diagnosis of the cause is immediately made, should not be dismissed without a thorough physical examination, which, as Stoll says, will take at least from 30 to 45 minutes. If such a patient comes during a busy office hour, a special appointment should be made for him.

Stoll reminds us that:

"1. Patients with incipient tuberculosis do not usually look ill.

"2. A complete history is often of more value than a physical examination.

"3. The absence of physical signs and the failure to find tubercle bacilli in the sputum do not in themselves exclude tuberculosis.

"4. Pulmonary hemorrhage in a young adult, even without symptoms or physical signs, and with normal temperature and pulse, should always be considered to be due to tuberculosis, until it can be proved to be due to some other cause."

Many times the tuberculin skin test will clear up an otherwise doubtful case.

New and Nonofficial Remedies

Since the publication of the book "New and Nonofficial Remedies, 1909," the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Their acceptance has been based largely on evidence supplied by the manufacturer or his agent and in part on investigation made by or under the direction of the Council. Criticisms and corrections to aid in the revision of the matter before publication in the book are asked for.

The Council desires physicians to understand that the acceptance of an article does not necessarily mean recommendation, but that so far as known it complies with the rules adopted by the Council.

W. A. PUCKNER, Secretary.

DIGITALEIN CRUDE.—Digitaleinum Crudum.—Digitalein crude is a mixture of glucosides from digitalis purpurea prepared according to the process of Schmiedeberg, containing digitoxin, digitalin and digitalein.

Commercial digitalein is an amorphous, yellowish-white, bitter powder, soluble ir lcohol, insoluble in chloroform and ether. foams on shaking. The solution yields a of lead acetate, ammonia water or tannic acid.

Actions and Uses.—Digitalein acts on the heart like digitalis. It is a diuretic.

Its uses are the same as those of digitalis.

Dosage.—0.001 to 0.002 Gm. (1/60 to 1/30 grain) two or three times a day.

SUPRARENALIN.—(See N. N. R., 1909.)

Suprarenalin Inhalant.—A 1:1000 solution of suprarenalin in an aromatized oil, containing approximately 10 per cent. of alcohol. Manufactured by Armour & Co., Chicago.

BILE SALTS—(See N. N. R., 1909.)

Proprietary Preparations:

BILEIN—Sodii glyco-taurocholas bovis—Abbott.—Bilein is a name given to a mixture of the essential salts of the bile.

Actions, Uses and Dosage.—See Bile Salts, N. N. R., 1909.

Manufactured by the Abbott Alkaloidal Co., Chicago. U. S. Trademark No. 44,140.

Bilein Pills, 1/4 grain.—Each pill contains bilein 0.015 Gm. (1/4 grain).

Bilein Pills, 1/8 grain.—Each pill contains bilein 0.008 Gm. (1/8 grain).

Bilein Pills, 1/12 grain.—Each pill contains bilein 0.006 Gm. (1/12 grain).

Prepared by Abbott Alkaloidal Co., Chicago.

IODONE OIL—Oleum Iodoni.—Iodone oil is a 2 per cent. solution of iodone crystals (See Iodone Surgical Dressing and Dusting Powder) in a mixture of alcohol, castor oil, and cotton seed oil. It is said to yield about 1 per cent. of iodine, slowly liberated on prolonged contact with moisture and to contain about 20 per cent. alcohol.

Iodone oil is prepared by dissolving iodone crystals in the mixture of alcohol and oils to which sufficient iodine has been added to overcome the decomposing effects of the solvent on iodone.

It is a clear dark reddish-brown oily liquid, having a specific gravity of about 0.912 at 25° C. (78° F.) and a faint alcohol-like odor.

When shaken with chloroform and water the chloroform acquires a violet color, which is decolorized by shaking with a solution of sodium thiosulphate.

If 5 Cc. of the oil is dissolved in 15 Cc. of chloroform and treated as under iodone ointment, considerable time being allowed during the titration for the complete liberation of the iodine (at least twenty-four hours), about 1 per cent. iodine, calculated from the volume of volumetric sodium thiosulphate solution, should be indicated.

Actions and Uses.—Iodone oil has the germicidal and alterative actions due to the iodine which is liberated on contact with moisture.

It is said to be useful in all catarrhal affections of mucous membranes, hay fever, etc.

Dosage.—Its employment should be regulated on the basis of its liberating 1 per cent. of iodine on contact with moisture. It may be applied as a spray or on pledgets of cotton or tampons. It can be injected hypodermically into tuberculous joints, etc.

Manufactured by the Henry C. Blair Co., Philadelphia, Pa. No patents or trademarks.

IODONE OINTMENT—Unguentum Iodoni.—Iodone ointment is a mixture of iodone crystals with petrolatum, said to contain about 4 per cent. of iodone and to yield about 2 per cent. of available iodine slowly liberated on contact with moisture.

Iodone ointment is a dark green unctuous mass, having the consistency of petrolatum and a faint iodine-like odor.

A small amount dissolved in chloroform in a test tube and shaken with water should impart to the chloroform a violet color, which is destroyed by addition of sodium thiosulphate solution.

If 2 to 3 Gm. of iodone ointment is weighed and dissolved in 15 Cc. of chloroform; 30 Cc. of water added and shaken frequently during one hour; the mixture titrated with tenth-normal sodium thiosulphate solution using starch as indicator, not less than 2 per cent. of iodine should be indicated.

Actions and Uses.—Iodone ointment has germicidal, alterative and stimulant powers due to the iodine liberated.

It is said to be useful in all conditions in which the local use of iodine in ointment form is indicated.

Dosage.—Its employment should be regulated on the basis of the liberation of 2 per cent. of available iodine on contact with moisture.

Manufactured by the Henry C. Blair Co., Philadelphia, Pa. No patents or trademarks.

BISMUTH BETA-NAPHTHOLATE — Bismuthi Beta-Naphtholas.—Bismuth beta-naphtholate is the bismuth salt of beta-naphthol.

Bismuth beta-naphtholate occurs in the form of a brownish or grayish powder without odor, almost tasteless and insoluble in water. It is slightly soluble in alcohol.

1 to 2 Gm. bismuth beta-naphtholate is shaken in a separator during one hour with 25 Cc. chlorform and 25 Cc. concentrated hydrochloric acid, and then 50 Cc. water added and again shaken. The chloroform solution drawn off and the acid mixture extracted with three more portions of 10 Cc. chloroform and the combined extracts evaporated and dried to constant weight over sulphuric acid, a residue should remain weighing at least 15 per cent. of the material used, and should respond to tests of identity for beta-naphthol.

The acid solution from which the naphthol has been extracted is transferred to a beaker, diluted to 200 Cc., heated to boiling, ammonia water added till turbidity appears, then sufficient hydrochloric acid to clear up the turbidity and then 50 Cc. of 10 per cent. ammonium phosphate solution is added to the boiling liquid. The precipitate is allowed to subside, the clear liquid decanted through a tared porcelain Gooch crucible, the precipitate washed with hot water by decantation and finally transferred completely to the crucible. The precipitate and crucible are dried, placed in a nickel crucible, and exposed to the full heat of a bunsen flame till the weig veight of the resulting bismuth phosphate hould yield a figure (representing bismuth, than 60 per cent. of the material taken.

1 to 2 Gm. bismuth beta-naphtholate is weighed to a small asbestos plugged percolating tube, 5 Cc. chloroform added, mixed by means of a glass rod, and allowed to percolate into a tared dish. When the liquid ceases to drop, a further portion of 5 Cc. of chloroform is poured into the percolator and also allowed to percolate into the tared dish. The stem of the percolator is washed with a little chloroform, and the combined washings and the percolates allowed to evaporate spontaneously and the residue brought to constant weight over sulphuric acid. The residue should not exceed 1 per cent. of the material taken.

Actions and Uses.—Bismuth beta-naphtholate is decomposed into its constituents in the intestines, where it exerts the effects of bismuth salts and of beta-naphthol. Hence it is used in catarrhal and fermentative gastroenteric disorders, such as gastritis, dysentery, diarrhea, etc.

Dosage.—For children 0.1 to 0.3 Gm. (1½ to 5 grains) and for adults 1.5 to 5 Gm. (22 to 75 grains) daily.

A mixture of beta-naphtholate with acacia should be avoided as a viscid precipitate rapidly becoming hard is likely to be formed.

Proprietary Preparation:

ORPHOL.—A name given to bismuth beta-naphtholate.

Manufactured by the Chemische Fabrik von Heyden, Radebuel near Dresden, Germany (Schering and Glatz, New York). U. S. patent No. 51635. U. S. trademark No. 27482.

Orphol Tablets.—Each tablet contains orphol, 0.3 Gm. (5 grains).

Non-Proprietary Preparation:

Bismuth Beta-Naphtholate.—P-W-R.

Manufactured by the Powers-Weightman-Rosengarten Co., Philadelphia.

ARTICLES ACCEPTED FOR N. N. R. APPENDIX

Manhattan Eye Salve Co., Owensboro, Ky.

Compound Yellow Oxide and Adrenalin Ointment (M. E. S. Co.)—An ointment said to contain yellow oxide of mercury 1 per cent., solution of adrenalin chloride 5 per cent., menthol 0.04 per cent., phenol 0.2 per cent., hydrous wool fat 25 per cent., white petrolatum sufficient to make 100 per cent.

Cocaine and Adrenalin Ointment (M. E. S. Co.)—An ointment said to contain cocaine hydrochloride 2 per cent., solution of adrenalin chloride 17 per cent., hydrous wool fat 25 per cent., white petrolatum sufficient to make 100 per cent.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, DECEMBER 18, 1909

AN ANTIVIVISECTION EXHIBITION

An antivivisection exhibition has been on view for two weeks at a busy point on Fifth Avenue, New York. Most of the exhibits belong to the American Antivivisection Society of Philadelphia. These exhibits were displayed in Philadelphia last spring and again at Atlantic City last summer. The American Antivivisection Society plans to make the show permanent and to send it extensively through the country (to Washington, Chicago, Los Angeles, and other cities) to "educate" people regarding the "horrors" of the laboratory use of animals. This program renders desirable a consideration of the features of the display and their significance.

The center of agitation in the exhibition is an array of animal holders. Various forms of this apparatus are displayed, some of them prominently in the front windows, to attract the attention of the passing crowd. There are six stuffed dogs, among them a lap-dog and other pets, fastened in distressful positions in the holders. An attendant informs the visitors that animals are thus fastened down in laboratories. She is careful to make no mention of anesthesia.

Any sympathy roused by the dead dogs in the holders is intensified by the paintings and prints on the walls, representing dogs fastened and gagged in various positions of torture. When an attendant was informed that one of the pictures could not possibly represent a conscious dog, since the dog, free to struggle, was evidently not struggling, she replied: "Doubtless the dog is curarized, and, though in great pain, is unable to move." When informed that the dog must be dead, because a curarized animal cannot breathe, and this animal was not receiving artificial respiration, she was without further resource.

An attendant, when asked why the head-holders were used, declared that their purpose was to break the jaws of the dogs. Why apparatus was used to break the jaws of dogs, she did not know.

Besides the dogs fastened in holders there is another dog, an attractive little terrier, stuffed in a sitting posture, with a tracheotomy wound in the neck, painted red. This dog is introduced as a victim of vivisection. None of the conditions of the operation could be learned. Probably, if the animal was operated on before death, it was completely anesthetized during the operation, and passed from anesthesia to its place in the exhibit, but the visitor is permitted to draw quite different inferences.

A stuffed fish resting on a board, a stuffed pigeon fastened to a support, an enormously overstuffed cat gagged and strapped to a holder, complete this "revelation" of methods of handling animals.

Near by, however, over a row of gas-burners, is an oven in which lies a stuffed rabbit, its mouth widely opened, as if gasping for its last breath. An attendant informs the visitor that this oven is used in laboratories to roast animals alive and, as they die, to study "nerve action and the circulation." The oven is an ordinary incinerator used in laboratories to burn waste and refuse!

The remaining features of the exhibit are on the walls. There are two entirely fanciful pictures of Pawlow dogs, representing them, quite falsely, as wasted, miserable creatures, sick unto death. There are eleven characteristically malicious and untruthful cartoons from *Life*. There is an enlarged illustration from Cyon's "Methodik" (Plate xv) showing a dissection of the salivary glands, and below it is stated: "This agonizing and hideous mutilation is performed without anesthetics," a falsehood. There is an oil painting of a rabbit stretched as if crucified, with a nail driven through each foot; from each wound blood is flowing, a picture to harrow the heart of the onlooker. What possible reference has this to any laboratory procedure? Another painting represents a dog strapped and gagged, but evidently struggling, while two men, armed with knives, gaze at the bloody gaping wound in its abdomen, with glee on their faces.

Such is the travesty on medical research presented to the public by the antivivisectionists. The untruth of the details has been stated, but the wickedly suggestive implications which make the very atmosphere of the display cannot be adequately described. The fundamental evil of the exhibition is the presentation of a false alternative. The picture of a dog bringing succor, and of another dog bound to a holder, entitled, "The Way They Treat Us" and "The Way We Treat Them," sums up the situation. If that were all, nobody would hesitate on which side to stand. It is no wonder that nearly fifty portraits of poets, novelists, statesmen, artists and clergymen, whose words express their objections to cruelty, have been collected to adorn the walls of this exhibition. Every decent man is opposed to cruelty. But that is not the question. It would be as fair to set up a picture of Grenfell stabbing his faithful dogs to death, labelled "Is This the Way to Treat Your Pets?" as it is to represent medical research as this grotesque show represents it. Grenfell killed his dogs to save his life, and every man with common sense commends his bravery, resourcefulness and proper sense of values.

The high purpose of medical research and its beneficent results for human welfare—the compelling motives of that investigation which utilizes animals, and the care taken for the comfort and health of the animals, in laboratories—these conditions, which alone give meaning and possibility to medical investigation, are kept carefully in the dark.

The visitors at the exhibition are mainly women, though many children, some quite young, have been seen gazing at the horrifying sights. The attendants are women—women who have never seen the inside of a laboratory of medical research, and who let their morbid imaginings take the place of facts. They move about among the visitors making insinuating remarks and stating falsehoods with an easy assumption of knowledge they have never possessed. They show an instrument-maker's catalogue to prove the truth of their representations—again with no mention of anesthetics. A catalogue of the instruments used in surgical operations on man could be used with the same sly suggestion of torture. As the visitors leave, the attendants hand them circulars containing garbled statements, misleading quotations, and reiterated falsehoods, the untruth of which has been often pointed out. Thus the exhibition is untrue in its representations, evil in its implications, and altogether harmful in its possible effects.

When the exhibition was at Atlantic City last summer the Philadelphia *Ledger* was moved to state editorially:

"It is really a serious concern that a number of good women, or others, should devote their labors to harrying the nerves of the crowd and inciting them to ignorant hostility against the humane studies which have done so much for the service of mankind. The public exhibition of an anatomic museum would be in any case an offense against taste and decorum; when it is employed for misrepresentation and obscurantism and for the propagation of false sentiment, prejudice and intolerance, it is proper to speak of it only with the most serious condemnation.

"Utterly preposterous as the 'chamber of horrors' on the Boardwalk must appear to all who *know* anything of the subject it pretends to illustrate, it yet has its serious aspect, as an attempt to play on ignorant emotion and to create a false sentiment in support of an unscientific, unreasonable, inhumane effort to impose indiscriminating and injurious restrictions on the acquisition of knowledge that is for the advantage of all living creatures."

When a lay paper takes such a stand as that, it is high time that members of the medical profession awaken to the harm that the opponents of research are doing. The public is being educated, but the ignorant are being led by the ignorant. If medical investigation is not to be seriously hampered in this country, those who do not know must be led by those who do, and must be taught to see the importance to the general welfare of the efforts which are being made in the medical laboratories, with the help of lower animals, to penetrate the mysteries of disease and death that confront mankind on every side.

THE BIOLOGIC RELATIONSHIPS OF THE BACTERIA

Discussions of the affinities of bacteria with other organisms, their phylogenetic relations to the higher plants and animals and the principles of classification within the group itself have often resulted in much uncertainty and difference of opinion. While it cannot be said that general agreement on these topics has yet been reached, there is no doubt that recent investigations into the physiology of bacteria have effectually disposed of some speculations once current. The position which bacteria occupy with reference to other groups of living organisms is to-day better defined than ever before.

The value of morphologic characters as a basis for determining bacterial relationships is evidently not so great as that of the physiologic manifestations of these organisms. This is so, not only because external structural characters are not easily studied in organisms that lie close on the borders of invisibility, but because internal—that is, physiologic or, perhaps more exactly, chemical—qualities are the more fundamental. The outer form is determined by the internal constitution and not the reverse. For these reasons some of the most recent attempts to classify bacteria and to establish their relationships to other forms of life have been based on physiologic grounds. Reference has already been made[1] to the excellent monograph of the Winslows on the classification of the micrococci. These authors essayed to bring order into the welter of genera, species and varieties that long existed in this important group of bacteria and they adopted for this purpose chiefly physiologic distinctions. The same principles have been more recently utilized by Jensen in his ambitious attempt to construct a "natural"—that is to say, genealogical—classification of bacteria.[2] Jensen very properly takes advantage of the significant discoveries of the last few years regarding the physiologic activities of certain bacteria. Three chief groups are distinguished:

1. Bacteria which are like the green plants in requiring neither organic carbon nor organic nitrogen. These are the so-called autotrophic bacteria, which possess the remarkable property of being able to build up both carbohydrates and protein out of carbon dioxid and inorganic salts.
2. Bacteria which need organic carbon compounds, but can dispense with organic nitrogen. These organisms can synthesize protein out of carbohydrates (or organic acids) and ammonia, nitrogen or nitrates.
3. Bacteria which are like the animals in requiring both organic carbon and organic nitrogen compounds. This group cannot bring about either protein or carbohydrate synthesis out of inorganic substances.

These fundamental subdivisions serve to illustrate the method followed by Jensen in drawing up his outline of a natural system of bacterial classification. It is sufficient to say that the other groupings suggested by this author are equally logical and are based on recent physiologic studies. Some conclusions of general interest may be noted. The mode of nutrition of the first-mentioned—autotrophic—group of bacteria points to them as being in all probability the first living organisms to appear on the earth's surface. Both plants and animals originated from such a parent stock, Jensen's opinion being that the animals—flagellates—were first to appear. At all events, bacteria probably gave rise, on the one side, to the protozoa, on the other to the blue-green algæ.

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[1] The Classification of Bacteria, THE JOURNAL A. M. A., Jan. 23, 1909, lii, 309.

[2] Jensen: Centralbl. f. Bakteriol., II., 1909, xxii, 305.

The nutritional requirements of the second and third groups, as above specified, indicate that these bacteria are phylogenetically younger than the first group. By the same mode of reasoning, the carbohydrate-fermenting organisms are older than the typical bacteria of nitrogenous putrefaction, and, to carry it still further, the lactose-fermenting varieties are of more recent origin than those related varieties which are not able to attack this carbohydrate, since lactose became available as a food-substance only with the relatively late advent of mammals. Again, the gelatin-liquefying species have developed, as a rule, out of the related non-liquefying species, since protein decomposition, which is itself one of the later acquisitions of micro-organisms, is facilitated by the secretion of proteolytic enzymes. The parasitic bacteria are naturally of more recent origin than the related saprophytic forms. Jensen finally constructs a very interesting genealogical tree which makes plain the relationships of the bacteria to the *Protozoa* and the *Cyanophyceæ* (blue-green algæ), shows a possible connection through the *Actinomycetes* with the *Eumycetes* (molds), and gives also a good conception of the physiologic relations between existing groups of bacteria.

Any attempt to bring the hazy realm of micro-organic life into orderly relation with the better-known macroscopic living world must be welcomed. Jensen's very interesting and ingenious effort has a value, possibly only provisional, but not to be overlooked for the present.

OLD MEXICAN MEDICINE

American historians, especially W. H. Prescott and H. H. Bancroft, have called attention to the fact that medicine reached a very high development among the Mexicans before the coming of Cortés. Their hospitals were well arranged, numerous, and existed in nearly every part of the country; and the traditions of treatment and the observations made on patients raised the art of healing to a high plane. The knowledge of plants was extensive, and even the science of diagnosis was notably developed. Women as well as men practiced medicine, and the department of women's diseases was exclusively in their hands. Indeed, medical traditions were so advanced as to make students of the history of medicine doubt whether such a high development of medical art and science could have been attained among a people apart from the great stream of medical tradition in Europe. There are records of cases in which European physicians failed and Mexican practitioners were successful. Cortés and his men were so well treated, both for wounds and for ailments of various kinds, that the former is said to have asked the Spanish government not to allow physicians of the Old World to come to Mexico.

A recent work by A. Gerste[1] on the medicine and botany of the ancient Mexicans gives very interesting information on this subject. The profession of medicine in Mexico, as in other countries—notably Ireland—was a family inheritance; and the secret medical formulas used by the Aztecs were transmitted from father to son. Their remedies were mainly herbal and of many different classes—antidotes, diuretics, depuratives, emetics, emollients, febrifuges, laxatives, purgatives and vermifuges. The seeds of a certain plant, not now to be readily identified, were used to make an intoxicating liquor that was given for anesthetic purposes to patients on whom an operation was about to be performed. Sahagun describes a solution which the Mexicans applied to wounds to make them heal rapidly and smoothly, and which, in Gerste's opinion, had the effect of an antiseptic. The Mexicans used a number of means to arrest hemorrhage, among them a stone applied to the back of the neck to stop bleeding of the nose. They used their remedies in many forms, as decoctions, infusions, oils, unguents and plasters; and certain gums and resins were used as electuaries. Hydrotherapy was considerably resorted to, and vapor baths were commonly employed.

As a consequence of the interest of the Aztecs in medical botany, botanical science was much farther advanced among them than might be expected. Gerste does not hesitate to say that their botanical knowledge was far ahead of that of the European world of their time. Their classification of plants was superior to that in use in Europe. Several centuries before the genius of Linnæus substituted for long descriptive terms the concise designation by means of a generic name and a specific epithet, the Aztecs had a botanical nomenclature resembling this in some particulars and distinctly superior to that of contemporary Europe. Besides they laid the foundation of geographic botany which is usually supposed to be of much more recent origin and traced the influence of temperature and elevation on plants in a scientific way. Their knowledge was imperfect, but showed many signs of fine powers of observation and abundant research.

The Duc de Loubat, at whose expense these notes have been published in their present form, has placed

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1. Gerste, A.: Notes sur la médecine et la botanique des anciens Mexicains, Rome, Imprimerie Polyglotte, Vatican, 1909.

the world of letters under renewed obligations, for in recent years he has shown himself an intelligent and beneficent patron of history and literature by the republication of many important documents relating to America.

THE PRESENT STATUS OF THE ARMY MEDICAL CORPS

But a few years ago the matter of maintaining the personnel of the Medical Corps of the Army at the authorized quota was a subject of grave concern to the Surgeon-General's office. Numerically, the corps, as authorized by Congress, only distantly approached the real needs of the service, and the slow influx of young men was such that the vacancies annually occurring were by no means filled by the applicants accepted at the annual examinations. For instance in the year 1907 there were sixty-four applicants, of whom ten were accepted for the Army Medical School in October, and subsequently commissioned as first lieutenants in June, 1908. The vacancies occurring from October, 1906, to October, 1907, totaled eleven. It is thus seen that the vacancies naturally occurring exceeded the new admissions to the corps during that year. In May, 1908, an examination of fifty-eight candidates gave nine qualified men. In August, 1908, four months after the passage of the reorganization bill, the figures became one hundred and twenty-eight for applicants and twenty-five for accepted candidates. There had been but a brief season in which to bring before the medical profession of the country the greatly increased advantages carried with a commission in the Medical Corps by virtue of the act passed last year, which reorganized the body and provided substantial increases in pay and promotion. In the period between October, 1908, and the same month of this year, the knowledge of the signal improvement worked by the new legislation was more widely diffused and the result is striking. The change is manifest in the number of applicants and accepted candidates, and when the later figures are compared with those of previous years it is evident that the recruitment of the corps is vigorously healthy. The records show that in January and July, 1909, two hundred and seventy candidates were examined and fifty-seven accepted, and the attendance at the Army Medical School in Washington this year is fifty-eight as compared to ten in 1907 and thirty-three in 1908.

Evidently there has been an awakening among the young medical men to a better understanding of the desirable features of an army medical officer's career. Pay and promotion are now on such a scale as to justify any young physician in considering the career, and in recent years resignation after admission is almost unknown, which shows that, when once identified, practically all are willing to remain.

There is now opportunity for scientific work and it is possible for any member of the corps, who has the necessary capabilities, to rise to the plane of Sternberg, Reed, Carroll, Gorgas and many others in the field of preventive medicine, and every incentive is given the internist, surgeon and bacteriologist in his chosen work.

The Army Medical Corps was never so full of promise to young men, and appreciation of its great opportunities was never so manifest as at this time. A significant feature of the situation at present is the fact that so many applicants are drawn from the staffs of the larger hospitals in the country. The course of instruction at the Army Medical School, including, as it does, special training in bacteriology, sanitary chemistry, tropical medicine, military surgery and hygiene, supplies a post-graduate opportunity of exceptional character and the result has been one of great uplift in the professional equipment of the medical officer. The fact that the student officer is paid over $200 a month while in attendance at the school impresses one that the government is earnest in its effort to develop the Medical Department of the Army.

IMPURE DRINKING WATER ON LAKE VESSELS

The Public Health and Marine-Hospital Service for some time has made a study of the spread of typhoid fever by railroads and steamships. The opportunities for the investigation of typhoid dissemination by means of the railroads have not been good, but through the system of marine hospitals it has been possible for the service to study typhoid in certain of its relations to ships. These studies have shown that the typhoid rate is higher among sailors than among men of the same age-periods in the ports made by the sailors. In addition, there has occasionally been an opportunity of studying an epidemic of typhoid among a group of people who were passengers on shipboard at the time of probable infection.

As there have been found good reasons for believing that ships were in some measure spreaders of typhoid among their crews and passengers, it is evident that there is some hygienic error on ships, either in construction or custom, or both. The very palpable errors in both construction and custom are set forth in Dr. Cobb's article in this issue on "Water Contamination Aboard Ship and Its Prevention."

Properly kept storage tanks for drinking water are not an unreasonable requirement, and can be demanded under present powers of the Department of Commerce and Labor. This should and must be done.

In addition to the large number of men who constitute the crews, there are the great multitudes who are passengers whose rights and interests must be conserved. Boats which ply on polluted streams should be compelled to use distilled water; those which ply on fresh water lakes would find it preferable to fill their tanks by special tubes after the ship has gone far enough from shore to secure pure water. Obviously ships plying fresh waters must be made by government to change their drinking-water methods. Polluted fresh water is no more fit to be sucked up through sea-cocks for drinking purposes than is salt water.

There is another phase of the relation of ships to the spread of typhoid which is even more important than that investigated by Dr. Cobb, and that is the disposal of sewage by the ship. At some lake ports it is possible for boats to pour out feces and slops right over the intake of the city's water supply. The psychology of approaching disembarkation crowds the toilet rooms just as the boat is passing the cribs. A large volume of excreta is deposited in the water near the intake. The cure for this situation may lie along any one of three lines: 1. Passenger vessels can require that all toilet rooms be kept locked in certain locations—to be determined in each case. This is the custom at present in vogue on the railroads, and has the advantage of having had its feasibility demonstrated. 2. Ships could be built with holding tanks for slops and sewage—these to be discharged after the ship is well away from intakes. This method would cause less inconvenience to the passengers and is, of course, preferable. 3. The third plan is that suggested by Surgeon Young and Major Judson,[1] namely, to designate certain areas about the cribs as quarantine anchorages which must be avoided by shipping.

The very necessary measures for the control of this noxious situation could easily be interpreted to rest with the Department of Commerce and Labor, the Treasury Department or the War Department. Different bureaus in the first two that might easily find legal warrant for control are those of navigation or the Public Health and Marine-Hospital Service. At any rate, all will agree that the situation demands prompt and effective action by some live government official.

A PLAGUE FOCUS IN CALIFORNIA

Plague foci, permanent in character, have been recognized for years as existing in China, northern India and South Africa. There seems little doubt that another such menacing center of fixed character has developed in California, thus making the fourth of the world's plague foci. In all these foci, or plague centers, the disease is kept in existence through rodents of one variety or another, is mildly epizootic in character and only rarely, under ordinary circumstances, is conveyed to human beings. But it is now thoroughly proved that from these permanent incubation districts the disease is conveyed to man through the intermediary, first of the rat and then of the flea. The reports on plague in California published in THE JOURNAL[2] over a year ago strongly hinted at the fact that a well-distributed infection of ground-squirrels probably existed; the recent work of the United States Public Health and Marine-Hospital Service in charge of Passed Assistant Surgeon W. Colby Rucker, and described by the latter in THE JOURNAL[3] last week, leaves no room for doubt. The work was in an entirely new field of preventive medicine and has been done against the great physical odds of long distances, wild country and burning summer heat; yet in spite of this the reports already presented show that Dr. Rucker has reduced what was formerly only a brilliant hypothesis to a certainty demonstrated in its smallest detail. Plague-infected squirrels have now been found in Contra Costa, Alameda, Santa Clara, San Benito, Santa Cruz, San Joaquin, Stanislaus, Merced and Santa Barbara counties—an area of about five thousand square miles. The eradication of squirrel plague by the extermination of ground-squirrels in such an enormous area is a task so stupendous as to be apparently impossible. Nor is the existence of plague in squirrels without menace to the human inhabitants of the infected area. Within the last few months three cases of human plague have occurred in Alameda County, and in each instance it has been proved that the disease was received from ground-squirrels. In twelve counties of the state, scouting parties are at work, the present object of the United States Public Health and Marine-Hospital Service being to determine, if possible, the extent of the territory infected; in all of this work the California State Board of Health is actively cooperating. It seems hardly necessary to call attention to the very grave menace to the entire country in the existence of this plague focus; it is not a mere local danger, but a national one. It is undoubtedly true that a severe epidemic of human plague could scarcely occur in a vermin-free population; but it is equally true that the infection may be conveyed at any time to any part of the United States, and in very densely populated centers the people are not always vermin-free. The existing facts present a problem both large and of grave import.

THE CURE-ALL IN ANCIENT ERIN

In the little volume on "The Antient Medicine of Erin," issued by Burroughs, Wellcome and Company, there is a paragraph on the announcement of a remedy in Ireland, about a thousand years ago, which ought to make the advertising managers of the nostrums of to-day feel that they are the feeble offspring of a degenerate age. This ancient Hibernian cure-all was claimed to be a preservative from death, a restorative for the living, a compensation for the want of sinews, a remedy for the tongue-tied (under which term were included all those suffering from defects of speech, from true aphasia to stuttering), a cure for swelling in the head, for wounds by iron, or of burning by fire or of the bite of the hound. It further prevented "the lassitude of old age, cured the decline" (by which the Irish have always designated consumption), the rupture of the blood-vessels (mentioned immediately after consumption because of the tendency to hemorrhage), took away "the virulence of the festering sore and the fever of the blood and even the poignancy of grief." The promise was that "he to whom it shall be applied shall be made whole"; and the announcement concludes: "Extolled be the elixir of life, bequeathed by Diancecht to the people, by which everything to which it is applied is made whole." In comprehensiveness of claims, that certainly leaves little room for improvement. We wonder if some of the credulous in those days did not try the stuff on leaky roofs and ragged clothes.

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[1] First Report of the Lake Michigan Water Commission, Urbana, Ill., 1909.

[2] Dec. 14, 1908, p. 2000; Sept. 19, 1908, p. 1010.

[3] THE JOURNAL A. M. A., Dec. 11, 1909, p. 1995.

Medical News

COLORADO

Tag Day in Denver.—The Hospital Saturday and Sunday Tay Day in Denver netted $5,000.

Personal.—Dr. John H. Larson has succeeded Dr. Joseph W. Gothard, resigned, as health officer of Palisades.——Dr. Charles E. Holden, Longmont, is reported to be seriously ill in Orange, Cal.

New Dormitories for State Hospital.—The State Hospital for Insane, Pueblo, is to have three new dormitories, each of which will have accommodation for 75 patients. Two of these buildings will be for women and one for men, and they will cost $50,000 each.

State Antituberculosis Association Formed.—The Colorado Association for the Prevention and Cure of Tuberculosis has recently been organized with headquarters in the Capitol Building, Denver. The organization will endeavor to have tuberculous persons registered, and will teach means of prevention of tuberculosis by continual agitation through the press and through lectures to the public. A tuberculosis exhibit, which has been held for two weeks in Denver, has recently closed.

ILLINOIS

Medical Staff Elects Officers.—The medical staff of the Graham Hospital, Canton, has organized with the following officers: President, Dr. Willis T. Zeigler; vice-president, Dr. Martha A. Richardson, and secretary, Dr. James E. Colman.

Asks for Larger Hospital.—President Busse of the board of commissioners of Cook county, in his annual report, points out the urgent need of a larger hospital. The present hospital, with a capacity of 1,300 patients, has cared for 1,700, the daily average for the year being 1,451. The new hospital should be large enough to accommodate 2,500 patients.

Victory for Pure Food.—Judge J. Otis Humphrey of the federal court, on December 10, is said to have decided that fifty cases of preserved eggs, shipped by the W. H. Hippolite Company, St. Louis, and seized in Peoria last March by government inspectors, were injurious to health and that the seizure was justified. Attorneys for the defense filed an appeal to the United State Appellate Court. Dr. Harvey W. Wiley, Washington, D. C., testified that two pounds of boric acid were used for one hundred eggs.

Personal.—Dr. August F. Bechtold, New Athens, who has been ill with tetanus in St. Elizabeth's Hospital, Belleville, is reported to be out of danger.——Dr. Charles B. Fry, Mattoon, before leaving for Biloxi, Miss., was presented with a diamond stud and Elk charm by the local employees of the Illinois Central Railroad.——Dr. William L. Secor and family, LaGrange, left for Florida December 6, where they will spend the winter. Dr. Secor has been made physician-in-chief of the new Ponce de Leon Sanitarium, St. Petersburg.——Dr. Jesse D. Dickinson, Galva, underwent a second operation at Cottage Hospital, Galesburg, November 22.

District Society Meeting.—The thirty-sixth annual meeting of the North Central Illinois Medical Association was held in Streator, December 7 and 8, and the following officers were elected: President, Dr. Franklin A. Turner, Sandwich; vice-presidents, Drs. Alfred E. Owens, Princeton, and Thomas W. Burrows, Ottawa; secretary-treasurer, Dr. George A. Dicus, Streator (reelected), and censors, Drs. John C. White, Seatonville, Charles A. E. LeSage, Dixon, Joseph I. Knoblauch, Metamora, John M. Kaiser, Somonauk, and Alonzo B. Middleton, Pontiac. Life memberships were conferred on Drs. Charles E. Cook, Mendota, Alfred E. Owens, Princeton, Thomas H. Stetler, Paw Paw, and Benjamin F. Landis, Tiskilwa.

Chicago

Sanatorium for Tuberculous Chicagoans.—A number of Chicago physicians and citizens have inaugurated a movement to purchase the Valmore Ranch near Las Vegas, N. M., and establish a tuberculosis sanatorium for patients of moderate means who may be able to do some work and will be paid for that work. Dr. E. Fletcher Ingals is at the head of the organization and a considerable amount has already been promised for the enterprise.

The Fenger Memorial.—The directors of the Fenger Memorial Association have decided to set aside $400 for 1910 to aid in medical investigation. Application with necessary details should be sent to the secretary, Dr. Ludvig Hektoen, 1743 West Harrison street, not later than February 1, 1910. This appropriation is part of the income of the Fenger Memorial Fund, which was created by subscriptions in honor of Dr. Christian Fenger of Chicago, who died in 1902, and the income is used to further medical investigation.

KENTUCKY

Tuberculin Test for Cattle.—The executive committee of the State Board of Health, meeting with the government experts, who have been making tuberculin tests of the cattle of Kentucky, announces that of 1,703 cattle subjected to the tuberculin test, 16 per cent. were found to be diseased.

City Hospital Condemned.—The November grand jury of Jefferson county considers the management of the county institutions creditable. Praises are given the Blind Asylum and the Lakeland State Hospital; the County Poor House was condemned as unfit to harbor the two dozen inmates; the bakery, dairy, and dining room of the Home for the Aged and Infirm were condemned, and the following report was made on the Louisville City Hospital:

> It is perhaps superfluous to say that this condition is a hundredfold worse at the City Hospital. The venerable building, crumbling to decay, after serving to shelter three generations of the city's sick disabled and unfortunate, is kept as clean as possible, and its inmates cared for with as much comfort as the building will permit. The development of modern hospital design and practice has left Louisville's facilities so far in the lurch that the institution has become a reproach and a disg[illegible] That it makes better provisions for its mal[illegible] for the poor unfortunates huddled in its [illegible] espeaks not a city of progress, as its great seal proudly boasts, but marks Louisville in this respect which should be its chief concern, as the city that has stood still. Efforts to remodel and renovate a hospital which has been in use nearly three-quarters of a century would be as impossible as they would be absurd. Entire replacement of the buildings is imperative, and further postponement of this drastic remedy will be a disgrace to the community.

The mayor of the city has stated that he favors the construction of a new city hospital to cost a million dollars and will urge the voters to endorse the proposition before the next legislature.

MARYLAND

Hospital Organized.—At a meeting held in South Baltimore, presided over by the mayor of the city, with Dr. John R. Abercrombie as secretary, the South Baltimore Hospital was organized and many contributions were received.

Advocates Inspection of Meats.—At a conference, held in Hagerstown Dec. 9, by county health officers and others for the consideration of a state law for the inspection of meat, Dr. Marshall L. Price, Baltimore, secretary of the State Board of Health, presented the draft of a bill, which was held to be too stringent. He was asked to modify and present it again. All present favored the creation of the office of state meat inspector.

MASSACHUSETTS

Sentenced for Manslaughter.—Frank L. Hill, an "herb doctor" of Fall River, who pleaded guilty to manslaughter in connection with the death of Amelie St. John of Woonsocket, R. I., is said to have been sentenced on Nov. 17 to imprisonment for not less than seven or more than ten years in the state's prison.

More Land for Hospital.—The trustees of the Boston State Hospital, with the approval of the governor and council, have purchased a site on Fenwood Road, containing about 90,000 square feet, near the Harvard Medical School, on which a hospital will be erected for the first care and observation of mental patients and the study and clinical treatment of mental diseases.

Personal.—Dr. Myles Standish, Boston, has been appointed Williams professor of ophthalmology in Harvard Medical School.——Dr. George L. Richards has been elected president of the Fall River Antituberculosis Society, and Drs. Joseph A. Barre and Henry A. Rosa, Fall River, and Edward W. Burt, Westport, directors.——Dr. Carl E. Meyer, Chicopee, has been appointed a medical inspector of schools.——Dr. Walter Channing has been elected a vice-president of the Brookline Antituberculosis Society.——Dr. John A. Gordon, Quincy, has been appointed vice-president of the Antituberculosis committee of Quincy, and Drs. T. Ramon Burke, Nathaniel S. Hunting, Willis J. Middleton, Daniel B. Reardon, and John T. Reynolds have been elected members of the board of directors.

NEW YORK

Hospital Site for Buffalo.—Mayor J. N. Adam announced at a meeting of the Tuberculosis Hospital Commission that he intends to buy the Perryville site for the hospital. This site includes 293 acres and the price is $19,650.

County Tuberculosis Hospitals.—Ulster County plans to take over the day and night camp for consumptives established last summer by the local committee on tuberculosis of the State Charities Aid Association and to convert it into a permanent hospital. Similar action has been taken recently by the counties of Monroe, Ontario and Schenectady. Like action is expected soon by the supervisors in some twenty other counties.

State Board Seeks to Prevent Blindness.—A special committee of the New York Association for the Blind which was appointed to investigate the causes of preventable blindness and to cooperate with physicians in seeking measures of prevention, reports that the committee has found that about one-*half of all blindness is due to preventable causes* and about one-third of the blindness of children is caused by ophthalmia neonatorum. This committee has united with the State Commisioner of Health in enforcing the use of a 1 per cent. solution of silver nitrate. The State Commissioner of Health will endeavor to provide this solution through local health officers to any physician or midwife applying for it. It has been enacted that birth certificates be returned within thirty-six hours instead of ten days as hithertofore.

New York City

Personal.—Dr. and Mrs. Alexander McLane Hamilton sailed for Europe on December 8.——Dr. Daisy M. Orleman Robinson has been elected a member of the *Société française de dermatologie et de syphiligraphie.* Dr. Robinson is the first woman member of this society.——Dr. Walter H. Kerby has succeeded Dr. John P. Schneble as house surgeon of St. Mary's Hospital, Jamaica.

For Cancer Research.—George Crocker, who died on December 4, left property valued at about $1,500,000 to Columbia University, the proceeds of the sale of said property to be used in the prosecution of researches as to the cause, prevention and cure of cancer, and in case the progress of science should at any time make such researches no longer necessary, the fund to be applied to other researches in medicine and surgery as may be determined by the trustees. The fund is at no time to be used for the erection of a building; hence the acquisition of this fund will lay on Columbia University the responsibility of providing a suitable building for this kind of work.

New Hospitals.—Work will soon be begun on the new Bradford Street Hospital which has just received an appropriation of $77,000 from the city. This institution will take the place of a reception hospital and will relieve the Kings County Hospital, which is overcrowded. The entire cost of the building will be $350,000, and it is intended that it will serve as a model in erecting other city hospitals.——The Staten Island Tuberculosis Hospital was already in great part completed when the city gave an appropriation of $1,350,000 recently. One million dollars had already been appropriated. The building can now be completed and will furnish accommodations for one thousand patients.

Buffalo

Personal.—Dr. Joseph Burke has been appointed surgeon of the Sisters Hospital.——Dr. Marshall Clinton has succeeded Dr. William Phelps as attending surgeon at the Buffalo General Hospital.

New County Hospital.—The board of supervisors of Erie county have appropriated $500,000 for the erection of a new county hospital. Further effort is being made for an appropriation of $200,000 for a building for the segregation and treatment of advanced cases of tuberculosis.

Municipal Tuberculosis Hospital.—The Municipal Hospital Commission has selected a site for the hospital at Perrysburg, at an elevation of 1,500 feet. The cost of the site is $19,200, and Mayor Adam has announced that he will pay for it and present it to the city. The hospital will be named the Adam Memorial Hospital, and the buildings are expected to cost about $200,000.

OHIO

Personal.—Dr. Robert Ingraham has been elected a member of the board of education of Cincinnati.——Dr. Louis Schwab, mayor-elect of Cincinnati, has decided to continue to serve on the city hospital medical board until the first of the year.

The McDowell Centenary.—On December 9, under the auspices of the McDowell Medical Society, a banquet was given at the Hotel Alms in honor of the centenary of the first ovariotomy performed by Dr. Ephraim McDowell on Mrs. Crawford, in Danville, Ky., Dec. 9, 1809. More than 150 physicians, many from Kentucky and neighboring states, were present. Dr. Louis Schwab was toastmaster. Dr. S. Cary Swartsel responded to the toast, "Ephraim McDowell," and gave a history of the life of Dr. McDowell, stating that he was born in Virginia, Nov. 11, 1771; married a daughter of the governor of that state; moved to Kentucky, but returned to Virginia to study medicine, and later studied in Edinburgh under Dr. John Bell; located in Danville, Ky., in 1795, where the operation which made his name famous, was performed. The woman lived for 40 years after the operation. Dr. McDowell died at Danville in 1830. A high tribute was paid to Dr. McDowell's services to humanity and to the medical profession. Dr. Fayette Dunlap, Danville, Ky., responded to the toast, "Pioneer Days in the Blue Grass," Dr. Rufus B. Ball, Cincinnati, on "Ephraim McDowell's Influence on Ligatures in Abdominal Surgery," and Dr. John H. Landis, Cincinnati, on "Modern Medical Martyrs." Remarks were also made by Judge McDowell, grandson of Dr. McDowell, and by Dr. Powell, both of Danville, Ky.

PENNSYLVANIA

Medical Club Election.—At the annual meeting of the Oil City Medical Club, December 2, Dr. Fanny Davis was elected president; Dr. John L. Hadley, vice-president; Dr. Sylvester W. Sellew, secretary, and Dr. Frank B. Jackson, treasurer.

Personal.—Dr. Evelyn Dickinson has resigned as second assistant resident physician of the women's department of the Norristown State Hospital for the Insane.——Dr. Charles C. Eicher, McKees Rocks, has been elected president and Dr. J. Donald Iams, Sheridan, treasurer of the Chartiers Branch of the Allegheny County Medical Society, which is taking the postgraduate course suggested by the American Medical Association.

Work at State Tuberculosis Dispensaries.—The State Department of Health has now 114 tuberculosis dispensaries in the commonwealth, new ones having been recently opened at Nanticoke and Brownsville. At present more than 11,000 patients are being treated at these dispensaries. Trained nurses are visiting the homes of the patients, instructing them how to care for themselves, and the other members of the household how to guard against infection. For the month ending October 20, the nurses made 10,338 visits, and during the ten months ending October 20, 76,794 visits were made and 471 patients were discharged from the dispensaries with the disease arrested.

Medical Staff Election.—The Ohio Valley Hospital, McKee's Rocks, at its annual meeting, December 6, elected the following staff for the coming year: Surgery, Dr. Charles G. Eicher, McKees Rocks, chief of staff, and Drs. Joseph G. Steedle and George R. Wycoff, both of McKees Rocks; medicine, Drs. Albert H. Burket, McKees Rocks, R. Hanover, J. Donald Iams, Sheridan, and Dr. Charles B. Keebler, McKees Rocks; and assistants, Drs. J. W. Burkett and William C. Minnich, McKees Rocks; eye, ear, nose and throat, Dr. George W. Beane; genitourinary diseases, Dr. John A. Hawkins, Pittsburg; diseases of children, Dr. George S. Bubb; obstetrics, Dr. John A. Williams, Sheridanville, and neurology, Dr. Christopher C. Hersman, Pittsburg.

State Charity Organization Meeting.—The first Pennsylvania Conference of Charities and Correction was held in Harrisburg, December 6 and 7. Governor Stuart presided at the opening meeting and the address of welcome was delivered by Mayor E. S. Meals. Addresses were also made by F. H. Nibecker of Glen Mills, chairman of the committee on organization, and Francis J. Torrance of Pittsburg, president of the State Board of Charities. At the morning session, P. R. Lee, general secretary of the Philadelphia section for organized charity, spoke on "Needy Families, Their Care and Treatment by Organized Charity." Dr. E. R. Walters, director of Health and Charities of Pittsburg, spoke on "Public Treatment of Needy Families." Papers were also read by Dr. James M. Murdock of the State Institution for Feeble-Minded at Polk, Dr. Henry M. Weeks of the state institution at Spring City, Dr. Frank J. Woodbury of the State Board of Charities, Monsignor J. W. Turner of the Archdiocese of Philadelphia, Professor David Emmert, Huntingdon, and Mrs. J. L. Anderson, Pittsburg. On Wednesday a permanent state organization was formed.

Philadelphia

Charitable Bequests.—A provisional bequest from an estate, valued at $57,500, to the Home of the Merciful Saviour for Crippled Children, was contained in the will of the late Marie

A. Brolesky.——The will of the late Catherine Boyle bequeaths $5,000 to St. Mary's Hospital.

Councils Vote to Buy Poor House Site.—On December 8, the city councils voted to purchase the land between State Road and Holmesburg Avenue and the Delaware river, adjoining the House of Correction, as a site of the proposed new home for the city's indigent. The tract comprises about forty-seven acres and the price to be paid will be about $50,000.

Gift to Jefferson.—Mrs. Henry C. Chapman has presented to the Jefferson Medical College all the laboratory apparatus and equipment used there by her husband, the late Dr. Henry C. Chapman, who was professor of the institutes of medicine and medical jurisprudence in that institution for twenty-nine years. The gift is said to be worth more than $20,000.

Surgeon General in Philadelphia.—Brigadier General George H. Torney, Surgeon General U. S. Army, made a visit to Philadelphia December 6. He was the guest of honor at a dinner at the Union League Club, made an address before the Northwestern Medical Society on "The Experiences of a Doctor in the Army," and was given a reception at the Southern Club in the evening.

Library for Jefferson Alumni.—The College Library of the Jefferson Medical College has a good working library of over 4,000 volumes in the college building in use by the students of the Jefferson Medical College. The alumni of this institution are invited to use the library whenever they are in the city. The library is open practically from 9 in the morning until 5 in the afternoon. It will be found on the first floor of the college building, Tenth and Walnut streets.

Honor Memory of Daring Physician.—A memorial tablet to Dr. Francis Kinloch Huger, of the class of 1797 of the University of Pennsylvania, the work of Dr. R. Tait McKenzie, was unveiled Nov. 5 by Miss Elizabeth Huger, a great granddaughter of Dr. Huger. Dr. J. William White made the presentation speech, and the memorial was accepted on behalf of the university by Dr. Wharton Sinkler. The tablet commemorates the daring attempt of Dr. Huger to rescue Marquis de Lafayette from the fortress of Olmutz, Austria, in 1794.

Personal.—Dr. Guy Hinsdale sailed for Europe, December 11. ——Dr. John M. Swan has been elected associate professor of clinical medicine in the Medico-Chirurgical College.——Dr. Harry Hudson has been elected chief of the orthopedic department of Jefferson Hospital and associate in orthopedic surgery in Jefferson Medical College.——Dr. Joseph Evans has been appointed professor of clinical medicine and medical adviser of students in the University of Wisconsin, Madison.——Dr. J. Frank Meade sustained a loss of about $800 by fire November 16.

Jefferson Hospital Clinical Society.—At a meeting of members of the staff of Jefferson Hospital, December 8, plans were made to form a scientific society to be known as the Clinical Society of Jefferson Hospital. The aim of the society is to encourage members of the hospital staff in research work and the compilation of scientific papers. The society is to meet the fourth Friday night of each month and the meeting for organization will be held on Jan. 28, 1910. The subject for discussion for that time will be "Pulmonary Embolism Following Abdominal Operations."

Plans New Hospital.—Plans have been drawn by Henry L. Reinhold and Lynn H. Boyer for a new building for the Roosevelt Hospital, 710 North Fifth street, the present quarters being inadequate for the demands of the river front and factory territory tributary to it. The new building will be four stories in height, with a frontage of forty feet and a depth of 125 feet, and will accommodate 150 patients. At present, with but fifty beds, the hospital is constantly filled. Since obtaining its charter as a general hospital in 1905, more than 1,700 patients have been admitted to the house and 17,000 have been treated in the dispensary.

Associations Elect Officers.—The annual banquet of the Medical Examiners' Association of Philadelphia was held December 9. Dr. John G. Clark, the retiring president, was toastmaster, and the following officers were elected: President, Dr. Samuel G. Walker; vice-president, Dr. Samuel H. Brown; secretary, Dr. Norris S. McDowell, and treasurer, Dr. George D. Morton.——The West Philadelphia Medical Society held its annual meeting and banquet December 6. The following officers were elected: President, Dr. Sherman F. Gilpin; vice-president, Dr. Hiram L. Lutz; secretary, Dr. Henry G. Munson; financial secretary, Dr. William M. Miller; and treasurer, Dr. Edmund L. Graf.

Baby Alliance Plans Campaign.—The Baby Alliance was formed last May, under the auspices of the Department of Health and Charities, the Board of Education and civic associations of women. The object of this body is to educate mothers in the elementary laws of hygiene and to establish milk stations, providing pure milk. A committee of seven met in Director Neff's office in City Hall and heard a paper read by Dr. Frank N. Yeager, infant mortality specialist of the city. He showed by statistics gathered by himself that one-half of the infant deaths were of babies of less than one year and that these deaths might easily have been prevented by better knowledge on the part of mothers.

Jonnesco in Philadelphia.—Dr. Thomas Jonnesco, dean of the medical faculty of the University of Bucharest, Roumania, visited Philadelphia, December 13, 14 and 15. He demonstrated his method of spinal anesthesia at Dr. Charles S. Frazier's clinic at the Hospital of the University of Pennsylvania and also of the clinic of Dr. Edward Martin at the same institution. He also gave an illustrated lecture at the University Hospital. On Tuesday at 1 o'clock he outlined his method and gave a demonstration at Dr. E. E. Montgomery's at the Jefferson Hospital and on Wednesday he gave a lecture and demonstration at Dr. W. L. Rodman's clinic at the Medico-Chirurgical Hospital. A dinner was given in his honor by Dr. Charles S. Frazier on Tuesday evening.

WISCONSIN

Lay Medical Journal.—It is announced that Dr. Julia Riddle, Oshkosh, has been elected editor in chief of a new monthly publication to be known as *The Layman's Medical Journal*, having for its object the eradication of preventable diseases. The collaborators on the staff are Drs. Anna B. Corr, Juneau, M. Adeline Riddle, Oshkosh, Belle P. Nair, Fort Atkinson, Johanna M. Droppers, Milwaukee, and Evelyn C. Hoehne, Milwaukee.

Personal.—Dr. Mazyck P. Ravenel, professor of bacteriology in the University of Wisconsin, Madison, has been elected a director of the Madison Antituberculosis Society, and has been appointed official reporter for the International Medical Congress at Buenos Aires, Argentina, in May next, where he will have charge of the tuberculosis program.——Dr. Thomas C. Phillips, Milwaukee, has been made dean and professor of ophthalmology and otology in the Wisconsin College of Physicians and Surgeons.——Dr. Peter B. Stewart, Chetek, is convalescent after a severe attack of pneumonia.——Dr. Wilson H. Van Dusen, Lancaster, who has been ill for several weeks, slipped and fell on a sidewalk Nov. 26, breaking his right arm. ——Dr. Henry T. Brogan, West Allis, has been appointed physician of Milwaukee county.——Dr. L. Rock Sleyster, Appleton, has been appointed physician of the state penitentiary.——Dr. George E. Knauf, Sheboygan, has been elected physician of Sheboygan county.——Dr. Susan Jones, Racine, has been elected secretary of the local society for the prevention of tuberculosis.

GENERAL NEWS AND COMMENT

Society Meetings.—The Missouri and North Arkansas Railway Surgeons Association was organized at Leslie, Mo., Nov. 3, with the following officers: President, Dr. Cyrus F. Crosby, Heber, Ark.; vice-presidents, Drs. T. D. S. McCall, Neosho, Mo., Samuel C. Daniel, Marshall, Ark.; and H. L. White, Rondo, Ark.; secretary, Dr. J. Oliver Cotton, Leslie, Ark., and treasurer, Dr. Asbury J. Vance, Harrison, Ark.——The following officers have been elected by the New England Pediatric Society: President, Dr. Charles P. Putnam, Boston; vice-president, Dr. Philip S. Potter, North Adams, Mass.; secretary-treasurer, Dr. Fritz B. Talbot, Boston, and councilors, Drs. John L. Morse, Arthur H. Wentworth, and Henry I. Bowditch, all of Boston.

The Health of the Army.—The report of the Surgeon General of the Army for the fiscal year just closed shows the lowest ratio of sick admissions on record, 575.47 per 1,000. The constantly non-effective rate for the enlisted strength of the army was 42.68 per 1,000 as compared with 46.17 for 1907 and 49.79 for 1906. The total admission rate was 1188.03 as compared with 1218.26 for 1907 and 1706.33 for 1906. The deaths from all causes were 414, of which 235 were due to diseases, the death-rate being 3.48 per 1,000 as compared with 3.44 for the preceding year. The highest death rates were from tuberculosis, pneumonia, and typhoid fever. The antityphoid vaccination test in the hospital corps has been found so successful that the surgeon general recommends the extension of the vaccination to include volunteers from all organizations to be detailed for duty outside of the United States and among troops to be ordered for special practice or maneuvers. He recommends that a medical officer be attached to the Militia Division to assist in the organization of the medical department of the militia and that the state authorities be required to equip a field hospital with its ambulance company for each three regiments in addition to regimental medical service.

The Health of the Navy.—The annual report of the Surgeon General of the Navy shows the relation of the different causes of death in the Navy and Marine Corps for the past fiscal year. Drowning heads the list with 47 of the 305 deaths, tuberculosis comes next with 30, pneumonia follows with 24, heart disease with 21, and nephritis with 15. Of the 26,350 sick admissions, 3,015 were due to venereal diseases, 2,631 to tonsillitis, 2.319 to wounds, and 1,677 to suppurative skin diseases. The ratio of admissions and readmissions per 1,000 of the strength for the year was 611.05 as against 630.08 for the previous year, and 649.65 for the decade from 1897 to 1906. The cigarette-tobacco bag is suggested as possibly playing an important part in the transmission of mumps, as the invariable habit of those who use tobacco in this form is to close the sack by pulling the puckering string with the teeth; thus the user of the sack by touching the saliva-soaked bag string may infect himself. Mumps occupies seventh place in the sick admissions, with 1,392, exceeding even the rate for bronchial and rheumatic affections. The insufficiency of the medical force is shown by the fact that less than 248 medical officers are available for the care of the 52,913 officers and men of the Navy and Marine Corps, or 1 to 254. Discontinuance of fresh milk as a part of the Navy ration is recommended, and the use of the Elliott ear protector against injuries by gun-fire is also recommended. Mention is made of the fact that among candidates for enlistment from the northwest, or those born in or long residents of the extreme northwest, thyroid enlargement of varying degrees, is found. The proposal to accept unusual period of watches on deck and in engine rooms for officers on board ship, in lieu of the physical tests of walking and riding does not meet with the approvel of the surgeon general, who believes that such tests will be an index of the moral stamina rather than the physical fitness of the officer.

FOREIGN

Nobel Prize Goes to Kocher of Berne.—The prize for medical research was this year conferred on Theodor Kocher of Berne, where he has been professor of surgery since 1872. He was born at Berne, Aug. 25, 1841, and is thus 68 years old. His fame rests mainly on his research on the physiology and pathology of the thyroid gland, although he is eminent as a surgeon and his "Manual of Surgery" is a classic text-book. His discovery of the cachexia that follows total removal of the thyroid was announced in 1883, and his work on the thyroid and parathyroids has inspired an immense amount of research in all lands. Among his latest works are some on transplantation of the thyroid, the blood picture in exophthalmic goiter, cancer of the thyroid, curability of gastric cancer, hypophysic and other tumors, and means to prevent and cure cretinism.——The professor of chemistry at Leipsic, W. Ostwald, received the chemistry prize, while the physics prize was divided between Marconi of wireless telegraphy fame and F. Braun, professor of physics at Strasburg. Switzerland, Germany, Italy, Sweden and France are represented in the recipients of the five prizes this year. The prize in medicine has been awarded in turn during the nine years since the foundation of the Nobel prizes to von Behring, Ross, Finsen, Pawlow, Koch, Golgi and Ramon y Cajal, Laveran, Ehrlich and Metchnikoff, and, finally Kocher, thus honoring eight different countries. Germany has had three recipients; France and Russia both claim Metchnikoff.

LONDON LETTER

(From Our Regular Correspondent)

London, Dec. 4, 1909.

A Historical Room at a College Museum

A special room has been added to the museum of the Royal College of Surgeons containing various exhibits of historical interest. The exhibits form a most interesting collection and include the body of a woman embalmed by Dr. Cruikshank and William Hunter in 1775; the mummified body of a boy who died from plague in 1665, which was found in the crypt of St. Botolph's Old Church; the skin of the heads of three Macas Indians from Ecuador so preserved that while contracted to the size of a doll's head they yet retain the features of living individuals; a collection of boots, shoes and gloves worn by the Irish giant O'Brien; pieces of human skin found nailed to the doors of Worcester Cathedral and the churches of Hadstock and Copford in Essex; a chain and belt used for securing lunatics; a cast of the head of Deeming, the murderer who was hanged at Newgate in 1892; and an electrical machine used by a surgeon named Birch about 1775, with a manuscript by his sister describing the cures said to have been effected with the machine.

Sleeping Sickness in Uganda

An important paper has been communicated to the Royal Society, the joint work of Col. Sir David Bruce, Capt. A. E. Hamerton, Capt. H. R. Bateman and Capt. F. P. Mackie, who constituted the sleeping sickness commission of the society recently sent to Uganda to investigate. The policy during the last two years of clearing the shores and islands of Lake Victoria of their inhabitants has been carried out. No native has been allowed to live or work within two miles of the shore except at a few cleared landing places, and within the last few months all the islands in the lake have been emptied of their population. Until recently it was believed that the tsetse fly, which conveys the disease, retains its infectivity for forty-eight hours, and therefore that it would be possible with safety to clear an island of its infected population one day and restock it with healthy natives a few days later. But it has now been found by experiment that the fly retains its infectivity up to eighty days and it seems probable that once infected a fly harbors the trypanosomes for the rest of its life. It therefore became important to discover how long the flies on the lake shore remained infective after the native population had been removed. Flies were collected at a cleared landing place which was used as a market by the inhabitants of one of the islands, who were highly infected with sleeping-sickness. This constituted a danger to the healthy natives of the mainland who had come to the market from places beyond the area of the disease. The landing was therefore cleared of undergrowth and in a short time the flies disappeared. As the result of many experiments it was concluded that the flies remained infective at least two years after the natives had been removed. This long duration of infectivity can be accounted for only by two theories—long life of the fly or the infection along the lake shore of birds and mammals which become a reservoir of the disease. At present the former theory has not been proved or disproved and of the latter there is no experimental proof.

PARIS LETTER

(From Our Regular Correspondent)

Paris, Dec. 3, 1909.

Discussion in the Chamber of Deputies on Depopulation

Apropos of the discussion of that portion of the budget of the ministry of the interior relating to the protection of young children, M. Gauthier of Clagny called the attention of the Chamber of Deputies to the serious question of depopulation. The alarming figures on this subject for the first semester of the present year were given in The Journal (Nov. 4, 1909, liii, 1833). The Neo-Malthusian League is spreading among women the idea that they have the right to avoid maternity. Since 1887 another league, also intended to promote depopulation, has been working through pamphlets, prospectuses, journals and lectures. There is also a class of criminals who, under the shelter of the league, send to families manuals of debauchery and pornography. In closing M. Gauthier referred to President Roosevelt's epigram that a nation in which the men are unwilling to make war and the women are unwilling to bear children is a nation stricken at the heart. M. Briand, the prime minister, replied that orders had been given that the authors of these shameful works should be severely prosecuted. He believed that the existing laws were sufficient for the purpose, but if not, he should not hesitate to demand more rigorous ones.

Code for the Protection of Young Children

The prefect of police of Paris has just caused a pamphlet to be issued in which are found all the laws, ordinances, and national and municipal instructions which bear on young children. This code for the protection of childhood will be sent to all the municipalities under the jurisdiction of the Paris prefecture, to the medical inspectors, and to the visiting inspectors of children boarded out. In this code will be found all the documents in regard to the obligations imposed on wet-nurses and care-takers, local commissions and medical inspectors of crèches. To this will be added the elementary advice, on the hygiene of infancy, in regard to natural, mixed and artificial feeding, published for mothers and nurses by the Academy of Medicine. The *Oeuvre de protection des enfants du premier âge* gives inestimable service in Paris. Thanks to its incessant efforts, the mortality of children boarded out under its control in the department of the Seine has been only 4.96 per cent. during 1908, while the average of infant mortality during the same year reached the truly frightful figure of 15 per cent. One may moreover form an estimate of the progress made by this organization from the fact that in 1907 the mortality of its nurslings was 5.15 per cent. and in 1900 8.7 per cent.

Repression of the Renting of Children for Begging

It is not rare to see in the streets of Paris beggars who in order to excite the pity of passers-by, carry in their arms during all seasons and at all hours, young children, most frequently lent or rented by irresponsible parents. Believing that this exploitation of infancy affects the health of young children unfavorably, the prefect of the police has just given severe orders for the repression of the criminal practices of those who rent children. After a rapid inquiry to determine the origin of such children, the agents of the police will send the children to an asylum of the public charities (*Assistance Publique*) and moreover the unworthy parents will be prosecuted before the courts.

The Period of Rest for Pregnant and Lying-in Women

A law has just been passed guaranteeing the positions of employed women during pregnancy and lying-in. According to this law, an employer who breaks a contract of employment because of the suspension of work by a woman during the eight consecutive weeks in the period which precedes and follows child-birth is liable for damages to the woman, provided that the latter shall have warned her employer of the reason of her absence.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Nov. 24, 1909.

Personal

Professor v. Franqué, the gynecologist of Giessen, has refused a call to Göttingen as successor to Professor Runge, deceased.——Dr. Treutlein, privatdocent at Würzburg, who has for some years been general director of the public health department of the Republic of Bolivia, has left for political reasons and has returned to Würzburg as instructor in naval, military and tropical hygiene.——Professor Bernstein, director of the physiologic institute at Halle, will celebrate his seventieth birthday, December 8.——Professor Schirmer, head of the eye clinic at Strasburg, has resigned. This is somewhat surprising as Schirmer is only 45.

Motherhood Insurance

The plan for insurance of women about to become mothers, which has been undertaken under private auspices in Baden, has been noticed in a previous letter. The proposal to make this a government undertaking applying to the whole empire has little prospect of success as the necessary annual expense of $70,000,000 (280,000,000 marks) would be more than the government would be justified in expending in the present state of its finances. Besides it is believed that sufficient relief for women and nurslings is afforded by the recent legislation in favor of women workers and by the proposed imperial insurance law.

Alcohol and Crime

An investigation into the relations between alcoholic intoxication and crime has been ordered by the Bavarian department of justice, confined at first to cases of serious offences against the criminal law. The investigation is to begin with Jan. 1, 1910. Those cases are to be included in which the crime was committed under the influence of intoxicants, or which can be traced to the habitual use of alcohol.

Limitation of Foreign Students at Strasburg Medical Clinics

Of late years the number of foreign female auditors (*hospitantinnen*) at the clinics has increased so considerably that the native students feel themselves placed at the disadvantage by the preemption of the best places and have made complaint accordingly. It has been settled that women who are not matriculants shall be allowed in future to visit the clinics as auditors only under condition that they can show evidence of a sufficient previous education. This evidence must be furnished by the presentation of a certificate that the individual is prepared for the regular study of medicine in a university or institution of equal grade in his own country. Exceptions are to be allowed for such auditors as take only special medical lectures, but are not pursuing a regular medical course.

Change of Physican at Lahmann's Sanatorium

At the end of next year Prof. v. Düring, director of the well known Lahmann's sanatorium, "The White Stag," at Dresden, will resign his position. What reasons have induced him to give up so desirable a place are not known; probably some trouble with the proprietors has arisen, as is usual, because the medical interest has conflicted with the commercial interest of the proprietors of the sanatorium. Similar conditions are seen in other institutions, especially in Brehmer's sanatorium at Görbersdorf, which is managed by the heirs of the renowned founder of the physical-dietetic treatment of consumption. Since the death of Brehmer, the medical management of the institution is changed almost annually. That the interests of the patients must suffer with such frequent change of physicians is readily understood. Prof. v. Düring is essentially a dermatologist. In this specialty he was professor for many years at the military school at Constantinople in the service of the Turkish government and won great distinction in this position. For this reason he received the title of pasha from the former sultan. From Constantinople he was called to Kiel a few years ago as professor extraordinary of dermatology. A short time thereafter he gave up his position and after the death of Lahmann he undertook the direction of his sanatorium. His assistants also leave the institution with him.

Typhoid Bacillus Carriers

In a small epidemic of fourteen cases of typhoid fever in Westphalia it was ascertained that the germs of the disease were introduced with the milk that was furnished by a dealer in the place in whose family there was found a bacillus carrier who had probably harbored bacilli in his intestine since an attack of typhoid which he experienced nine years before. In another village of Westphalia a cook who had typhoid twenty years ago has communicated the disease in the course of time to members of the family of almost all the persons in whose service she has been and has been responsible for at least twenty-four such cases.

Pharmacology

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE AMERICAN MEDICAL ASSOCIATION]

BISMUTH BETA-NAPHTHOLATE

W. A. Puckner and W. S. Hilpert

Uniformity in composition of medicines, official in the U. S. Pharmacopœia, is secured by the method of preparation or the tests of purity and strength for which that book provides. As a rule there are no standards of purity or strength for substances that are not included in the Pharmacopœia, with the result that substances nominally supposed to be identical frequently are found to vary in composition not only with the brand, but often with different batches of the same brand. The Council on Pharmacy and Chemistry aims to establish standards for these articles, so as to insure the uniformity of unofficial remedies and to overcome this stumbling block to therapeutic accuracy and efficiency. It is in connection with this line of work that the examinations of different brands of bismuth beta-naphtholate, about to be described, were made. The results are published for the specific purpose of showing the need of such control of unofficial articles.

One of the incidental results of these examinations is to show that even different specimens of what is supposed to be the same product, may differ widely in composition. It is especially interesting in this particular case, because the firm whose product is shown to have possessed such lack of uniformity is the one that holds patents which are claimed to give it the exclusive right to make this product. It sells the preparation under a protected (trade-marked) name, and curiously enough it maintained that other preparations of bismuth beta-naphtholate which appeared on the market shortly after this protected preparation was introduced were "crude toxic and irritant imitations which are mere mechanical mixtures of bismuth salts and naphthol."

THE DRUG ITSELF

Bismuth beta-naphtholate is practically insoluble in water and is only slightly soluble in dilute acids. It is, therefore, not materially changed in the stomach. The intestinal fluids, however, are said to decompose it into its constituents and according to the literature on the subject when thus acted on the bismuth exerts an astringent action, while the naphthol acts as an antiseptic. The composition of bismuth beta-naptholate has not been definitely determined; the following chemical formulas are variously assigned to it: $C_{10}H_7O(BiO)$ (Schmidt's Pharm. Chemie.); $Bi_2O_2(OH)C_{10}H_7O$ (National Dispensatory; Merck's Index; British *Codex*; Chemische Fabrik von Heyden; Hager's Handbuch der Pharm. Praxis); and $Bi(C_{10}H_7O)_3.3H_2O$ (U. S. Dispensatory).

The composition of bismuth salts varies so that it is probable that a bismuth beta-naphtholate of definite composition can only be made with great difficulty. However, since the therapeutic value of this preparation must depend on the bismuth and on the "combined naphthol" contents, it is important that the substance used by physicians should be of fairly uniform composition. Its therapeutic value is said to depend largely on its freedom from uncombined or free naphthol and the product should, therefore, be relatively free from this constituent. With the object of determining the uniformity of composition of bismuth beta-naphtholate, as it is now available, the various products found on the market were analyzed, to determine their bismuth and free and "combined naphthol" contents.

LABORATORY FINDINGS

Bismuth beta-naphtholate is found on the market in powder and in tablet form. The powder is light-brown or grayish-brown, without odor and practically tasteless, insoluble in water and only partially so in alcohol. Strong acids decompose it into its components which by proper manipulation can be separated and estimated.

Several specimens, both of tablets and powder, of different brands were obtained, some from the manufacturers and others on the open market. In appearance the tablets were practically alike, but the powder form varied from a light grayish color through a pinkish-brown to dark brown. Experiments were made to determine the bismuth and combined naphthol contents by decomposing the bismuth beta-naphtholate and separating the constituents. Since bismuth beta-naphtholate is insoluble in chloroform, substances other than bismuth beta-naphtholate, including free naphthol were estimated by direct extraction of the specimens with chloroform or ether. The results of these estimations[1] are given in the following table:

Brand.	Bismuth.	"Total Naphthol."	Sol. in Chloroform or Ether.
Orphol (Chemische Fabrik von Heyden).			
Specimen 1 (tablets)*	67.12	10.57	3.85
Specimen 2 (tablets)	61.05	21.58	0.40
Specimen 3 (powder)	69.08	21.50	18.46
Specimen 4 (powder)	68.21	24.05	0.40
Bismuth Beta-Naphtholate (H. K. Mulford Co.).			
Specimen 1 (tablets)	56.47	6.89	4.89
Specimen 2 (tablets)	51.27	18.84	3.21
Bismuth Beta-Naphtholate (Powers-Weightman-Rosengarten Co.)			
Specimen 1 (powder)	75.30	15.56	0.19
Specimen 2 (powder)	75.07	15.56	0.33

* The percentages given were calculated on the assumption that the tablets contained the amount of substance claimed.

A noticeable lack of uniformity among the products is disclosed by the table. Thus the bismuth content ranges from 51.27 per cent. in a specimen of one brand to 75.30 per cent. in another brand. This alone certainly shows the necessity of some control and regulation in the manufacture of the products. Among the specimens of a single brand we find the bismuth varying from 61.05 to 69.08 per cent., a condition which should not exist and which by care in preparation can be avoided.

A similar variation exists in the naphthol content which ranged from 6.89 to 21.58 per cent. It was found that the specimens varied not only in the quantity of actual naphthol present but also in the composition of what was supposed to be naphthol. The material which was extracted weighed and recorded as "total" or "combined naphthol" should represent the content of beta-naphthol. Some specimens examined failed to respond to the usual tests for beta-naphthol. The same may be said of the so-called "free naphthol," or more correctly, "ether- and chloroform-soluble matter." As indicated by the solubility in chloroform or in ether the various products were found to contain from 0.19 per cent. to about 18.46 per cent. soluble matter.

It is noteworthy that the products of the same brand, manufactured under the same patent, bearing the same trade-marked name on identical labels—should vary from 61 to 69 per cent. in the bismuth content, from 11 to 24 per cent. in naphthol content, and from 0.40 to 18.0 per cent. in matter soluble in chloroform. If such a condition exists in a product so identified and protected what may not be expected of products for which no claims of uniformity are made or implied, by patents or trademarks? As a means of comparison of the compositions of the different brands examined the following summary is given:

SUMMARY OF FINDINGS

Bismuth Beta-Naphtholate (Powers-Weightman-Rosengarten Co.).—The most important features shown by the analysis of this product are high bismuth content and practical freedom from free naphthol. The two specimens of this brand examined—one purchased on the open market and the other submitted by the company—were found to be almost identical, as is shown by the table. Specimen 1 contained 75.30 per cent. bismuth, 15.56 per cent. naphthol, and 0.19 per cent. free naphthol; specimen 2 contained 75.07 per cent. bismuth, 15.56 per cent. naphthol, and 0.33 per cent. free naphthol. This brand contained the highest percentage of bismuth and the lowest content of free naphthol of any examined.

Orphol (Chemische Fabrik von Heyden).—The specimens of Orphol examined may well be specified as "old" and "new" Orphol. The "old" specimens were obtained and analyzed some time ago, while the "new" specimens were obtained only recently. Among the old specimens, that is those received and examined some time ago, the bismuth content averaged about 68 per cent., the matter recorded as "total naphthol" about 16 per cent., and the chloroform-soluble matter about 11 per cent., the highest content of the latter found in any brand. The so-called naphthol of these old specimens in many cases failed to respond to the usual tests for naphthol, and exhibited none of the physical properties of naphthol, so that it was concluded that the greater part of the naphthol used in the preparation of the product had in some way, by oxidation or nitration probably been converted into decomposition products, and so no longer gave naphthol reactions. In other words, naphthol, as such, was not present in the preparation.

The chloroform-soluble material consisted of not free naphthol but was chiefly a bismuth organic compound, which also gave none of the free naphthol reactions. This constituent was found in quantities as high as 18 per cent., and just to that extent the product was contaminated and made uncertain.

These specimens, considering their composition, could hardly be called bismuth beta-naphtholate in spite of the patent rights and trade-marked name, and they stand out as an example of the kind of product that may be expected while no control in the manufacture is demanded. A specimen of Orphol tablets examined some time ago was found to contain 67.12 per cent. bismuth, 10.57 per cent. "naphthol," and 3.85 per cent. chloroform soluble matter. A specimen examined more recently contained about 61 per cent. bismuth, 21.6 per cent. naphthol, and from 0.3 to 0.4 per cent. chloroform soluble matter. Although the new tablets show a somewhat diminished bismuth content, the naphthol has been materially increased and free naphthol practically eliminated, showing on the whole an improvement over the older tablets.

The most recent specimen of Orphol examined contains 68.21 per cent. bismuth, 24.05 per cent. naphthol, and 0.40 per cent. chloroform soluble matter. A comparison of this analysis with estimations made on specimens some time ago indicates the extent to which the product has been improved. The combined naphthol, which is important for the proper therapeutic action of the product is well above the average and the free naphthol which is a very objectionable ingredient is now almost entirely eliminated, to the benefit of the profession and the credit of the manufacturers.

Bismuth Beta-Naphtholate Tablets. (H. K. Mulford Co.).—A specimen of these tablets was examined some time ago and the bismuth beta-naphtholate was found to contain 56.47 per cent. bismuth, 6.89 per cent. naphthol, and 4.89 per cent. chloroform soluble matter. A more recent product was examined and found to contain 51.27 per cent. bismuth, 18.84 per cent. combined naphthol and 3.21 per cent. chloroform soluble matter. Here again attention is called to the endeavor and partial success in the improvement of the product. Although the new tablets have a slightly lower bismuth content, the total naphthol has been appreciably increased, while a certain amount of the undesirable free naphthol has been eliminated.

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[1] The analytical details are contained in a paper presented to the scientific section of the American Pharmaceutical Association, 1909, and will appear in the printed proceedings of that body and also in the Annual Report of the Laboratory of the American Medical Association.

A STANDARD NEEDED AND RECOMMENDED

The above summary of the results of analysis for the various products and specimens brings out more distinctly the necessity of a standard for the control of the future manufacture of bismuth beta-naphtholate, insuring a product on which physicians can rely for uniform effects.

To establish a standard for bismuth beta-naphtholate, both the highest possible and the highest available purity must be considered. It would be useless to set a standard which could not be conformed to and yet one must be chosen which will eliminate the poorer and more variable products. For bismuth beta-naphtholate the following standard is recommended:

Bismuth beta-naphtholate should contain not less than 60 per cent. bismuth, 15 per cent. total naphthol, which should respond to tests for beta-naphthol, nor more than 1 per cent. of ether- or chloroform-soluble matter, when analyzed according to the methods of analysis employed in this investigation.

PHARMACOPEIAL REVISION

Report of the Therapeutic Committee of the British Medical Association

The report of the therapeutic committee of the British Medical Association on the revision of the British Pharmacopeia (supplement to the *British Medical Journal*, 1908, ii, 319) is of interest to American physicians because it clearly indicates that on the question of scope or content of the Pharmacopeia, the one question that is of prime importance to the physician, medical men are not only capable of outlining rational general principles but are also able to give, in detail, reasons that will appeal to thinking men, quite regardless of whether the latter have any special knowledge of medicines.

The general principles adopted by the committee on therapeutics to guide them in determining on the proposed additions and deletions are as follows:

> "1. Crude drugs which contain an active ingredient possessing all the desirable actions of the crude drug might be replaced by this active ingredient if it can be obtained commercially and its identification and purity ensured. If such an active principle is official, the crude drug might be deleted. For example, jaborandi leaves, coca leaves, elaterium and many crude drugs yielding only volatile oils might be deleted.
>
> "2. Drugs and their preparations possessing no obvious and serviceable action should be deleted, e. g., arnica rhizome, cuspari bark, hemidesmus root, lupulin, mezereon bark, serpentary rhizome.
>
> "3. Unnecessary duplication of the preparations of a drug should be avoided. Thus one 1 per cent. solution of a morphine salt, or one solid extract of belladonna, is sufficient.
>
> "4. Purely diluent preparations of a drug should, as far as possible, be avoided, e. g., solutions of potassium permanganate, almond mixture.
>
> "5. Substances which do not require to be defined officially for the protection of the practitioner, or the vendor or purchaser, e. g., prunes, figs, brandy, sherry, might be omitted.
>
> "6. Substances of no therapeutic importance, which are used only in the making of preparations and are not contained in the final products, should be deleted or transferred to an appendix, e. g., benzol, solution of iron persulphate."

These principles show very clearly that the therapeutic committee of the British Medical Association has in view a pharmacopeia intended to serve the best interests of members of our profession, an aim that should be self-evident but one which is commonly overlooked in considering what the Pharmacopeia should be.

These principles also indicate that the problems that are confronting British physicians are in no way different from those that we must contend with in the revision of our Pharmacopeia; and they further suggest that if the real purposes of the Pharmacopeia could be kept steadfastly in mind the problems of its revision would be enormously simplified.

While the therapeutic committee of the British Medical Association does not specifically state that the true therapeutic value of a substance should be the sole criterion for admission, the principles as stated show the trend of opinion. In curious contrast to this evidenced thought is the sentiment, altogether too freely adopted in our own country, that the extent of use of a substance be considered as the sole justification for admission to or retention in the Pharmacopeia. Unfortunately the degree of popularity which a preparation enjoys frequently stands in no relation to its real value or even to its reputation among the leading clinical authorities, at least so far as this country is concerned.

The *British Medical Journal*, commenting editorially on the report of the therapeutic committee, points out that, while several recommendations for the omission of drugs from the future editions of the British Pharmacopeia may seem somewhat drastic, they are nevertheless fully justified by the general principles adopted as a guide for the committee.

Altogether the suggested deletions number about one hundred and include many articles and preparations which in former times were very familiar, but which in the light of more accurate knowledge and greater experience are known to be unnecessary or valueless. Other articles like prunes, figs and brandy are recommended for omission because they are not usually prescribed as such and require no official descriptions, being commercial products that vary in quality and price. Altogether it is quite apparent that the therapeutic committee has given much thought to the work. The report should be read by all who are directly interested in the question of pharmacopeial revision.

A perusal of the list of articles recommended for admission is to the advantage of our own Pharmacopeia, since most of these articles are now official in the U. S. Pharmacopeia. The proposed admissions include: extract of malt, ethyl chlorid, methyl salicylate, guaiacol, solution of formaldehyd, chloralamid, hexamethylenamin, solution of cresol and soap, and antidiphtheric serum; also the following unofficial articles: aspirin, or acetyl salicylic acid, a suprarenal preparation, veronal, a soluble preparation of theobromin, orthoform, a less toxic substitute for cocain, and some articles of minor importance.

We in this country have made at least a good beginning in connection with the coming revision of our Pharmacopeia, as is shown by the reports of the several section committees (The Journal A. M. A., Sept. 4, 1909, p. 791). In an editorial (Oct. 30, 1909, p. 1491) we stated that the methods pursued concerning admissions by the last committee on revision were not such as to appeal to the medical profession, too little pains having been taken to determine how well founded were the wishes represented as favoring admissions. It will be well, therefore, to see that in the forthcoming revision of the Pharmacopeia such methods are followed as will secure a representation of the practices of progressive medical men.

With the report of the therapeutic committee of the British Medical Association as an illustration of the practical possibilities, with the reports of the section committees of the American Medical Association as a demonstration of the feasibility of doing even more efficient work, and with the admirable scheme for revision suggested by Torald Sollmann (The Journal, Nov. 6, 1909, p. 1543) as a practicable solution of pharmacopeial revision problems to look forward to, it would appear as though the way for securing a better and more representative book for the medical practitioner was clearly outlined. It remains for members of the medical profession to say whether they will have a Pharmacopeia representing the foremost thought in therapeutics, or one which is practically valueless for this purpose.

As medical men we must not lose sight of the fact that the shortcomings of the Pharmacopeia, so far as scope and content are concerned, are in reality a measure of our own neglect of a plain duty, and that unless all classes of medical practitioners are willing to take an active interest in the matter of pharmacopeial revision it will be difficult indeed to avoid the odium that must attach itself to us should the forthcoming ninth edition of the U. S. Pharmacopeia fail to reflect adequately the best, and only the best pharmacal therapy in American medicine.

COLLARGOL

Report of the Council on Pharmacy and Chemistry

The following recommendation was submitted to the Council:

A letter from Dr. S. Solis Cohen to the Editor of THE JOURNAL has been transmitted to the Council. In this letter Dr. Cohen states that his communication to the chairman of the collargol commission should have been published with the Council's rejoinder to Schering & Glatz's reply, which appeared in THE JOURNAL, July 10, 1909. In view of Dr. Cohen's request, it is recommended that publication of his letter of dissent to the majority's findings be authorized.

The recommendation having been adopted, the letter of Dr. S. Solis Cohen is here published.

W. A. PUCKNER, Secretary.

PHILADELPHIA, May 3, 1909.

DR. W. A. PUCKNER, Chicago, Ill.

My Dear Dr. Puckner:—I have received your letter of April 30, enclosing copy of Schering & Glatz's report and of Dr. Edsall's explanatory note.

I still feel that the committee made a mistake in not permitting Messrs. Schering & Glatz to be heard before deciding on a report, although this error was in a measure corrected by submitting to them the proposed report and receiving their written comment on it before publication.

The explanatory note involves reaffirmation of a number of points of fact, theory and attitude concerning which I differed with the majority of the committee, and I am therefore unable to give it my unreserved approval. As an instance of what I believe to be hypercriticism on the part of the committee, I would cite that portion of the explanatory note relating to the Hocheisen quotation. The fact remains that Hocheisen used the word "wertvolles," and Schering & Glatz admit that they should have translated it "valuable" instead of "invaluable." The committee shows that what Hocheisen really said was: "Hence collargol is no specific, but is an aid in suitable cases," and that further on, after having described types of unsuitable cases, he adds: "Used according to these principles, collargol injections constitute a valuable measure in cases of puerperal sepsis." Messrs. Schering & Glatz now condense this into: "Collargol is a valuable aid in cases of puerperal sepsis."

It seems to me that both Messrs. Schering & Glatz and the committee are in part at fault. That is to say, Messrs. Schering & Glatz should quote exactly what an author says, with his limitations and in his exact language. They are not justified in leaving out the limiting phrase, "Used according to these principles;" they are not justified in leaving out the limiting phrase, "no specific." On the other hand, it must be admitted that the opinion of the author in this particular instance has been substantially represented in the revised phrase, and that to magnify the importance of the incident is to leave the judicial attitude and approach that of the prosecutor.

My own opinion remains as before, that Messrs. Schering & Glatz claim too much, and that the majority of the committee doubts too much; that collargol is worthy of admittance to the list of recognized nonofficial remedies, and that Messrs. Schering & Glatz should be required to revise their advertising matter in such a way as to give the exact words of every author cited; and that all the limitations and qualifications which an author throws around his opinion should be quoted. On the other hand, they are perfectly justified in quoting experiments and conclusions, clinical observations and recommendations, of investigators and of clinicians who may have formed a favorable opinion concerning the drug or who may have established to their own satisfaction any chemical, clinical or pharmacologic fact concerning it. The evidence being submitted, the reader can draw his own conclusions as to its trustworthiness and authority. It would be manifestly unfair to set up for advertising matter a standard which is not required of text-books, namely, infallibility in observation and logic.

To avoid misunderstanding, however, I would, in conclusion, emphasize again my agreement with the majority of the committee that quotations must be exact, *verbatim et literatim*, and that statements of the results of experimental observations must be made in such a way as to convey the exact facts, and not in so partial a manner that, however innocently, they may mislead readers not familiar with the details of laboratory work.

It is time to stop bandying words in this matter, and come to an agreement and conclusion honorable to all concerned and worthy of the issue. SOLOMON SOLIS COHEN.

Correspondence

Transmission of Bovine Tuberculosis to Human Beings

To the Editor:—It behooves one who writes history to be very sure of his facts. When one attempts to correct history already written, the necessity for accuracy is still more important. These thoughts have been forced on me through the reading of the article by Dr. H. L. K. Shaw in THE JOURNAL for Nov. 27, 1909, on the "Transmission of Bovine Tuberculosis to Children." It has seldom been my misfortune to read a so-called scientific paper with such glaring inaccuracies of statement. Dr. Shaw is evidently very anxious to support Koch in his errors through thick and thin, and evinces an ardor which would be better served by greater accuracy.

To begin with, the conclusions he attributes to Koch at the British Congress for Tuberculosis in 1901 are those given by him in 1908 in Washington, after Koch's errors had been shown up by the work of numerous scientists in various parts of the world. Dr. Shaw complains that Koch has been persistently misquoted, but he seems to have fallen into the bad habit himself. What Koch really said in London in 1901 is as follows:

1. "Human tuberculosis differs from bovine and cannot be transmitted to cattle."

2. "Though the important question whether man is susceptible to bovine tuberculosis at all is not yet absolutely decided, and will not admit of absolute decision to-day or to-morrow, one is, nevertheless, already at liberty to say that if such a susceptibility really exists the infection of human beings is but a very rare occurrence. I should estimate the extent of infection by the milk and flesh of tuberculous cattle, and the butter made of this milk, is hardly greater than that of hereditary transmission, and, therefore, do not deem it advisable to take any measures against it."

No one can read these conclusions without believing that Koch intended to make the practical statement that there was no danger to mankind from tuberculosis of cattle, and very properly this impression has become wide-spread with the laity and the profession.

Koch's conclusions in 1908 are as follows:

1. "The tubercle bacilli of bovine tuberculosis are different from those of human tuberculosis."

2. "Human beings may be infected by bovine tubercle bacilli, but serious diseases from this cause occur very rarely."

3. "Preventive measures against tuberculosis should therefore be directed primarily against the propagation of human tubercle bacilli."

As Dr. Shaw seems to be ignorant of what Koch said in 1901, it is not to be expected that he would appreciate the difference betwen Koch's attitude at that time and at present. In 1901 Koch questioned the possibility of transmission of bovine tuberculosis to man in any form; in 1908 he limited his contention to pulmonary consumption (THE JOURNAL A. M. A., Conference in Camera on Human and Bovine Tuberculosis, Oct. 10, 1908, p. 1262). The stand now taken is entirely different from the former, and Koch has skilfully raised an academic discussion which has befogged the main question, and diverted the attention of some persons from his former blunder.

At the so-called "*conference in camera*," to which Dr. Shaw refers, there were not many present who could report cases of pulmonary tuberculosis due to the bovine bacillus. It must be remembered, however, that this point had never before been raised, and the great majority of those who had studied the question were interested solely in refuting Koch's statement regarding the problematical danger to mankind from tuberculosis of cattle. It is easy to say offhand, as Dr. Shaw does, that "the possibility of contamination had not been fully guarded against" by the English Royal Commission and by Professor Arloing, but this does not prove it. Koch's contention in this case was mere quibbling. It must be remembered also that the German commission in its first report gives one instance of miliary tuberculosis in which the bovine bacillus was found in the lung. Koch declined to accept this case as one of pulmonary tuberculosis due to bovine bacillus, and Dr. Theobald Smith in his attempts to support Koch, found it necessary to explain that these were not cases of pulmonary consumption, because the patient died before open lesions could form. The difference between ordinary pulmonary consumption and miliary tuberculosis is of course known to every medical student, but certainly this case reported by the German commission should be ranked among those of pulmonary tuberculosis due to the bovine bacillus.

Dr. Shaw also makes the statement that, in 1905, I asserted "that the majority of cases of tuberculosis of children were of alimentary origin and due to the bovine bacillus." Again Dr. Shaw is guilty of misquotation. I have never in public or private, in writing or by spoken word made such a statement, nor have I believed it. It may be cruel to ask that Dr. Shaw will read carefully what I have written on this subject, but I certainly have the right to ask this when he professes to quote me.

Dr. Shaw refers to the case of an infant in which, he says, a long chain of circumstantial evidence convicted a cow of being the origin of the disease. When the cow was slaughtered, however, no tuberculosis could be found. It is not strange that the cow did not transmit tuberculosis to this child since it was free of the disease itself. It is hard to understand just what Dr. Shaw wishes to show by this case. Only two conclusions are justified. First, the test may have been at fault; but, second, and more important still, it points to the unreliability of clinical evidence in determining this question.

Dr. Shaw speaks further of a circular letter sent out to members of the American Pediatric Society and leading pathologists. I wish to protest here against any such method of deciding this question. Without wishing to belittle the ability of any of these men, I hold that the question is one that can be determined only by accurate laboratory investigation. Only pathologists and bacteriologists who have made a careful study of this question are competent to express an opinion on it. I grant to every one, of course, the right to read and draw conclusions as to the weight of evidence on one side or the other. Laboratory investigations have shown beyond question that bovine tuberculosis is transmissible to human beings, and that the lesions produced do not differ in any way from those caused by the human bacillus.

Dr. Shaw speaks of the sensational articles "magnifying the great danger of bovine tuberculosis," and quotes Dr. Bensel as deprecating "the spread of alarm in the minds of the public in regard to the danger of tuberculosis from milk." If Dr. Bensel has made any investigations which render him competent to express such an opinion, they have escaped my observation. It may be injurious to have the public believe that milk is the chief cause of tuberculosis in human beings, but when the work of Dr. Park in the city of New York shows that 200, and possibly 300 children die from bovine tuberculosis every year in that city, it seems high time that the profession and public in general should recognize bovine tuberculosis as a serious menace to human health.

Dr. Shaw, while trying to belittle the results of the English Royal Commission, failed to quote the work of the German Imperial Commission, which in fairness he should have given. This commission in 84 cases of tuberculosis in children found that 21, or exactly 25 per cent., showed the bovine type of bacillus, figures which correspond very closely to those given by the English commission.

I would not be understood as belittling the importance of all measures of prevention. I admit freely, as I always have, that as far as our present evidence goes, man is the greatest source of danger to man. I have not, as Dr. Shaw intimates, changed my position on this one particle. Those who are actively engaged in supporting Koch in his blunders, and trying to belittle the importance of bovine tuberculosis as a menace to human health, are, it seems to me, criminally responsible.

I have felt the necessity of speaking plainly in writing this letter, because in the recent and most important suit against the city of Milwaukee brought to prevent the enforcement of its ordinance in regard to bovine tuberculosis, Dr. Shaw's testimony has been made much of by the plaintiffs. I think I have shown that he has misquoted liberally, and if his conclusions have been drawn from such careless reading, they must of course be of no value.

MAZYCK P. RAVENEL, Madison, Wis.

The preceding letter was submitted to Dr. Shaw, who replies as follows:

To the Editor:—Permit me to thank you for this opportunity of replying to Dr. Ravenel's rather bitter attack on my scientific integrity. The main criticism is that I have been inaccurate in the presentation of my quotations. Although I made use of over thirty references Dr. Ravenel challenges but two. The first is that I endeavored to mislead my readers in the matter of Koch's conclusions before the British Congress of Tuberculosis in 1901. My authority and quotation are taken from Professor Koch's address before a joint meeting of Sections I and VII of the International Congress on Tuberculosis last fall and published in full in THE JOURNAL, Oct. 10, 1908, p. 1256. At the beginning of the address Koch states: "The results of these experiments have led me to the conclusions which I first communicated to the British Congress of Tuberculosis in 1901. They are, in substance, as follows: 1. The tubercle bacilli of bovine tuberculosis are different from those of human tuberculosis. 2. Human beings may be infected by bovine tubercle bacilli but serious diseases from this cause occur very rarely. 3. Preventive measures against tuberculosis should therefore be directed primarily against the propagation of human tubercle bacilli." While these conclusions appear in the 1908 address, yet Koch himself distinctly says they were his 1901 conclusions and that he had not changed from them in 1908.

The second accusation of misquotation is in regard to a statement attributed to Dr. Ravenel himself. If Dr. Ravenel has been misquoted and misrepresented, I offer my sincere apology. My quotation was made honestly and taken in good faith from the sworn and personally corrected testimony of Professor Adami of Montreal in certiorari proceedings in a suit between the Board of Health of Montclair, N. J., and the Borden Condensed Milk Co. This testimony is a matter of public record and accessible to Dr. Ravenel.

As I have been accused of careless and dishonest reading, I would like to call attention to just one statement in Dr. Ravenel's letter. He quotes me as saying that "it is easy to say the possibility of contamination had not been fully guarded against by the English Royal Commission and by Professor Arloing." If the reader will refer to my article on page 1807 he will find no such statement regarding the English Commission. The criticism in regard to Professor Arloing's case was not made "offhand" by me, but by Koch and Theobald Smith. (See THE JOURNAL, Oct. 10, 1908, p. 1263.)

The value of everything in this world lies in its true perspective. We must look at the facts in a calm, judicial and temperate manner. It is unfortunate that any bitterness or partisanship should be shown in seeking for the exact truth in a subject so vital to mankind. I, as a medical practitioner, have had my attention called almost exclusively to the medical side of the question; while Dr. Ravenel, in his laboratory work, has probably given almost his entire attention to bovine infection. It is the old story of the shield. I see the gold side while Dr. Ravenel has seen only the silver side. Human infection causes 98.5 per cent. of fatal tuberculosis and bovine tuberculosis causes 1.5 per cent. I have never denied that tuberculous cattle are a menace to public health. I do maintain and insist, however, that we must not in any way minimize the very great and real danger of human contagion and magnify too much the relatively unimportant danger of infection from bovine tuberculosis.

The possible motive of Dr. Ravenel lies both in the concluding paragraph of his letter and in the final paragraph of an address delivered before the American Association of Medical Milk Commissions in Chicago in 1908, which I quote, as follows: "Our statements must be definite and strong. We have the most abundant scientific evidence on which to take our stand, and there will always be those who from one motive or another try to belittle the importance of this question. Such people should not be handled too gently."

HENRY L. K. SHAW, Albany, N. Y.

Miscellany

Impressions of America.—N. Guleke, privat-docent of surgery at Strasburg, was given a traveling scholarship last spring and spent nearly three months in the United States studying the work and equipment of various surgeons, part of his report appearing in the *Münchener med. Wochenschrift* during November. He concludes with the statement that the old saying of the Americans: "We have the big buildings, but over in Germany you have the big men," has ceased to be true. America is producing such big men that the stream of disciples no longer sets exclusively toward Europe; there is a counter-stream which is bound to increase year by year, and the more active the interchange the more rapid the progress all around. He expresses amazement at the luxury of some of the hospitals, but missed in some of them the special room for changing the dressings, which is regarded as indispensable in German hospitals. The American trained nurse is lauded. The almost constant good results with ether in the hands of the Americans explains, he says, why new methods of anesthesia do not take in this country as in Europe. Guleke also expresses surprise at the slowness with which the American surgeons operate, their aim evidently being to refrain from everything that might injure or lower the vitality of any of the tissues in the slightest degree beyond what is absolutely necessary—especially their minutely painstaking measures for hemostasis. He was impressed also with the smallness of the incisions and the lack of retractors used during operations. He comments on the prompt decision for operation which permits surgical interference during the early stages of gastric ulcer or gall-stone disease when in Europe the case would still be for some time longer in the hands of the internists. He also remarks on the comparative disregard of the present status, attention being directed mainly to the anamnesis. In his description of the various operations he witnessed by Crile, Cushing, Meyer, Robinson, Ochsner, Elsberg, the Mayos, and others, he repeatedly emphasizes the perfection of the technic and asepsis. He says of the Atlantic City meeting of the A. M. A., which he attended, that it sems to correspond in every respect to the German *Naturforscher* congresses. The zeal with which the members sat through the entire sessions without signs of fatigue also impressed him; it was so contrary to the custom in the German surgical congresses where members get up and leave during an address. The courtesy in the discussions, etc., also impressed him, and the hearty applause for especially noted members.

A Note on the Faradic Stimulation of the Postcentral Gyrus in Conscious Patients.—The recent work of Sherrington and Grünbaum in accurately delineating the confines of the so-called motor area in the ape by a method of unipolar faradization have greatly revised our idea of cortical localization and led to a confirmation of the results for man by similar stimulation of the cerebral cortex in anesthetized patients. A further unique step, however, has been taken by Harvey Cushing (*Brain*, 1909, xxxii, 44) when he stimulated the postcentral gyrus of the cerebral cortex of two patients in a conscious state, during a "second-stage" operation. The two patients were "afflicted with epileptic attacks inaugurated in each instance by a sensory aura in the right hand." Primary anesthesia and 1/8 gr. of morphin were administered only for the scalp incision and to remove the bone flap. In each case "the patient composedly and promptly recovered from the temporary narcotic effect of the drug," and no pain was experienced during the remainder of the operation. The patients eagerly assisted in the experiments of cortical localization and responded, telling the sensation felt on stimulation of the cerebral cortex. The purpose of the paper is "to record solely the physiologic aspects of these observations, although their surgical aspects are possibly of even greater importance; for if it will be possible in the future to pick out with an electrode areas of the brain from which the sensory aura of a focal convulsion has originated, we shall have advanced a long way toward the possible operative localization of subcortical irritative lesions of the immediate postcentral field. . . . In both of the patients the situation of the central fissure was determined by obtaining characteristic motor responses from the precentral gyrus, these motor responses being attended by no sensation other than that of the forced change of position which accompanies similar movements elicited by stimulation of a peripheral nerve. On the other hand, in both of these patients stimulation of the postcentral convolution gave definite sensory impressions which were likened in one case to a sensation of numbness, and in the other to definite tactual impulses. In both of the patients, furthermore, stimulation of the outlying convolutions gave no response whatever, either of a subjective sensation or of active movement."

The Occurrence of Remissions and Recovery in Tuberculous Meningitis.—There exists among the majority of the medical profession the greatest skepticism with regard to the diagnosis of cases of tuberculous meningitis in which there were remissions of symptoms or in which recovery occurred. Alfred E. Martin (*Brain*, 1909, part 126, xxxii, 209) made a careful analysis of the reports of the London and Vienna hospitals, which show that in 2,166 cases diagnosed as tuberculous meningitis, only 22 patients, or about 1 per cent., were discharged from the hospital cured or relieved, though these figures, Martin says, are perhaps a little too high. A critical review of the literature is also given, and many of the reported cases of remission and of recovery are considered doubtful. Some space is devoted to differential diagnosis and to "methods of confirming the diagnosis," in which are emphasized, that it is impossible to accept a diagnosis of tuberculous meningitis as certain if it is based solely on the clinical symptoms, though the possibility may be very great; and the importance of the complete lumbar puncture method of diagnosis. One of Martin's conclusions is that "undoubtedly long remissions and even recoveries do occur in tuberculous meningitis. Recoveries are possibly more frequent than has been believed, since no fewer than twenty undoubted cases have been recorded since 1894, while other cases of recovery have been published in which the same definite proof of the nature of the disease has not been afforded, but some of which probably were true cases of tuberculous meningitis. In these cases either the resistance of the individual is so much greater than usual that the disease is checked early in its course, or the virulence of the bacilli is so much less than usual that the lesions in the meninges become localized and later undergo a fibrous change. The lesions in the meninges may at a later period form the focus of a fresh infection, which usually terminates fatally, and consequently the prognosis in these cases must be guarded. No treatment up to the present has been discovered which has any specific effect in promoting the favorable termination of the disease."

Poisoning from Illuminating Gas.—A. Robin's advice is to keep the patient seated instead of reclining, thus reducing the congestion in the head, sprinkle with cold water, and rub the legs vigorously while keeping up artificial respiration; possibly traction of the tongue (*Laborde*) will be sufficient. Venesection should be done as promptly as possible, withdrawing about 500 gm., nearly 15 ounces, of blood. As soon as this has been done, apply cupping to the base of the lungs, front and rear, at the side and at the back of the neck. The patient should then be made to inhale oxygen; "he can never be given enough, nor can it be kept up long enough." A purgative enema should then be given, possibly 15 gm. each of sodium sulphate and senna in 500 gm. water. In one case in which all these measures failed, he finally succeeded by intravenous infusion of 500 gm. of physiologic salt solution. The neuralgias which are liable to develop later should not be treated with the usual drugs as the latter have a more or less toxic action on the red corpuscles; morphin should be the main reliance. Any paralysis developing should be combated with electricity and massage, anemia with sulphur baths and iron. His article is summarized in the *Gazette Méd. Belge*, 1909, xxii, 79.

The Influence of Hot Baths on Pulse Frequency, Blood-Pressure, Body Temperature, Breathing Volume and Alveolar Tension in Man.—The physiologic effects of hot and cold baths on the normal, healthy human individual were demonstrated by Leonard Hill and Martin Flack (*Jour. Physiol.*, 1909, xxxviii, 441). The tabulated results afford a ready reference of the principal physiologic effects of hot and cold baths.

Such results should be taken into account in the consideration of the indication or contraindication of hot or cold baths in clinical cases. It is shown "that immersion up to the neck in a hot bath (110-105 F.) raises the mouth, axilla and rectal temperature up to 102.5-104.6 F. in fifteen or thirty minutes. This rise of temperature is accompanied by greatly increased pulse frequency (up to 160), and lowered blood-pressure (down to 60), and loss of the mechanism which compensates for the influence of gravity on the circulation. The rise of body temperature is also accompanied in every case but one by greatly increased breathing frequency and volume (even up to 50 liters), accompanied by a notable fall of carbon dioxid tension (down to 3.07), and corresponding rise in oxygen tension of the alveolar air. Owing to the washing-out effect of and increased oxygenation produced by this heat dyspnea, a student is able to hold his breath after a hot bath two and a half times as long as normally. A cold shower constricts the skin and lowers the axillary and mouth temperatures to normal or subnormal, but not the rectal temperature; it lowers the pulse frequency, increases its fulness, raises the blood-pressure and stops the faintness. The breathing volume and alveolar tensions return to normal after the shower."

A Constant Bursa in Relation with the Bundle of His.—E. J. Curran (*Anatomischer Anzeiger*, Sept. 1, 1909, xxxv, 89) from a study of human, calves' and sheeps' hearts points out the following new facts and considerations concerning the auriculoventricular bundle of His. There is a bursa of lubricating mechanism in constant relation with the auriculoventricular bundle, in view of which the possibility of bursitis must be considered in connection with certain cardiac symptoms, and with conditions met with in acute febrile diseases, such as acute rheumatism, endocarditis, etc. The bursa is capable of facilitating the extension of any endocardial process along the course of the conducting system, on account of its anatomical relationship with the endocardium, and of the fact that even small twigs of the auriculoventricular bundle which lie immediately under the endocardium are surrounded with cellular tissue, the spaces of which are continuous with the main bursa. The existence of the bursa tends to prove either that the auriculoventricular bundle does not contract at all, or that it contracts in a different way and at a different time from the contraction of the ventricle. The striking gross resemblance of the reticulum in the calves' and sheep's hearts to a nerve ganglion, and its connection with all parts of both auricles through three large trunks and a number of small twigs and not, as was once thought, merely arising in the right auricle only, is very evident when it is carefully dissected out. These connections point to the possibility of the contraction wave either beginning in the reticulum and proceeding through its branches to all parts of both auricles, or to its coming from all parts of both auricles to meet at the reticulum. In this case there would be a probability of each auricle controlling the time of contraction of the corresponding ventricle, and the meeting at the reticulum of the various bundles of fibers from both auricles and proceeding thence to the ventricles as the auriculoventricular bundle, would merely mean an economy of space.

The Relationship Between the Thyroid and Parathyroids.—J. Halpenny and F. D. Thompson (*Anat. Anz.*, 1909, xxxiv, 376) made a study of the parathyroids of the dog after extirpation of the thyroids, and found that to all intents and purposes the parathyroids become converted into thyroid tissue after such an operation. "The most noticeable feature about the thyroid tissue which has developed from parathyroid is the irregular shape of the vesicles, but the appearance thus presented is strikingly similar to that which is found in the thyroid gland after parathyroidectomy." Aside from the vesicles, there is found tissue in the normal thyroid which seems identical with that of the parathyroids, and "there seems to be no escape from the conclusion that in mammals the thyroid and parathyroid tissues are related to each other, and that the connections are not only physiologic, but anatomic." There being no symptoms after removal of the thyroids, when the parathyroids are left behind, a second operation, in which the parathyroids were removed, was performed. "After removal of the altered parathyroids, the animal showed practically no symptoms for a month, but after this period it developed tremors, became restless and idiotic, and suffered from conjunctivitis, loss of hair and eczema. Death occurred forty-four days after the second operation, and there was no typical tetany at any time."

Classification of Sputum Findings.—I. G. Gabrilowitsch proposes as an improvement on the present methods of classification the following four groups as sufficiently accurate to class the ordinary run of cases: 1. From 1 to 10 bacilli in entire preparation. 2. From 1 to 10 bacilli in each field. 3. More than 10 bacilli in each field. 4. Multitudes of bacilli in each field. In his communication in the *Russki Vrach*, 1909, viii, 298, he shows how the outcome in large numbers of cases corresponded to the above grouping, and that more minute classification is superfluous.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

STOVAIN—NOT A NEW ANESTHETIC

To the Editor:—Please refer me to the literature on the new anesthetic, stovain. F. T. Bascom, Rochester, N. Y.

Answer.—Stovain is not in any proper sense a new anesthetic; it was discovered by Fourneau and the discovery was presented in his name to the Academy of Sciences by Haller in February, 1904. It has a considerable literature. References to the modification of spinal anesthesia suggested by T. Jonnesco are given in The Journal, Nov. 27, 1909, p. 1831. Newspaper accounts have generally misrepresented the character of Jonnesco's modification and have designated him as the discoverer of stovain and frequently have omitted reference to his use of strychnin as an adjuvant. A full description of stovain can be found in New and Nonofficial Remedies, p. 123.

Below are given references to some of the articles on the use of stovain which have appeared in English or which have been abstracted in The Journal. An exhaustive list of the literature on the subject would require too much space.

Coakley, C. G.: Report on the Use of Stovain, *Med. News*, New York, April 15, 1905.

Schiff: Stovain as a Local Anesthetic, *Deutsch. med. Wchnschr.*, Aug. 31, 1905; abstr. in The Journal A. M. A., Oct. 14, 1905, p. 1209.

Trautenroth: Intoxication from Stovain, *Deutsch. med. Wchnschr.*, 1906, xxxii, No. 7; abstr. in The Journal A. M. A., April 14, 1906, p. 1147.

Munchmeyer, O.: Spinal Stovain Anesthesia, *Beitr. z. klin. Chir.*, August, 1908, lix; abstr. in The Journal A. M. A., Oct. 10, 1908, p. 1287.

Willis, C. S., and Wallace, D.: Ten Cases of Spinal Anesthesia, *Australasian Med. Gaz.*, Nov. 20, 1907.

Torrance, G.: Stovain Spinal Anesthesia, with over 5,500 Cases from the Literature, *Surg., Gynec. and Obst.*, December, 1907.

Duncan, H. R.: Six Cases of Stovain Spinal Anesthesia, *Intercolonial Med. Jour. of Australasia*, November, 1907.

McGavin, L. H.: Fifty Cases of Stovain Analgesia by the Intraspinal Injection, *Lancet*, London, April 11, 1908.

Newman, A.: Spinal Anesthesia, *California State Jour. Med.*, March, 1908; abstr. in The Journal A. M. A., May 16, 1908, p. 1653.

Hardouin, P.: Deaths after Spinal Stovain Anesthesia, *Arch. générales de chir.*, Aug. 25, 1908; abstr. in The Journal A. M. A., Oct. 3, 1908, p. 1191.

Spielmeyer, W.: Modification in Nervous System after Stovain Anesthesia, *München. med. Wchnschr.*, Aug. 4, 1908; abstr. in The Journal A. M. A., Sept. 12, 1908, p. 955.

Sabadini: 679 Operations Performed under Spinal Anesthesia (Cocain or Stovain) by Tuffier's Method, *Lancet*, London, Oct. 24, 1908.

DIVISION OF FEES

To the Editor:—Please refer me to articles in discussion of or decisions of medical societies on the question of division of fees as applied to ordinary consultant practice. T. H., Toledo, Ohio.

Answer.—The following references may be consulted:

Saunders, Bacon: Division of Fees and Giving Commissions; Texas State Jour. of Med., January, 1909; abstr. in The Journal A. M. A., Oct. 31, 1908, p. 1536.

Queries and Minor Notes: Etiquette as to Fee for Substitute Obstetrician, THE JOURNAL A. M. A., Oct. 5, 1907, p. 1206.

Discussion, Southwestern Tri-State Med. Association of Texas, Oklahoma and Indian Territory, Nov. 8-9, 1905; abstr. in THE JOURNAL A. M. A., Dec. 2, 1905, p. 1755.

Queries and Minor Notes: Fees of Attending Physician and Consultant who Operates, THE JOURNAL A. M. A., Aug. 12, 1905, p. 479.

Fee-Splitting in the French Courts; abstr. in THE JOURNAL A. M. A., Aug. 1, 1903, p. 321 (from *Progrès Médical*).

Editorial: Dichotomy, or the Division of Fees, THE JOURNAL A. M. A., Feb. 28, 1903, p. 590; June 20, 1903, p. 1729.

Brown, R.: Fee Division, *California State Jour. Med.*, April 1909.

Larkin, J. C.: Dichotomy, *Ohio State Med. Jour.*, July, 1907.

Earle, C. B.: Should there be a Division of Fees? *Jour. South Carolina Med. Assn.*, Dec. 21, 1906.

McKee, E. S.: Division of Fees, *St. Louis Med. Review*, July 14, 1906.

HEROIN HYDROCHLORID AND OPIUM

To the Editor:—Please state the relative value of heroin hydrochlorid and opium. How much opium does one grain of heroin represent?

H. G. HEANEY, Corpus Christi, Tex.

ANSWER.—Heroin hydrochlorid is described in New and Nonofficial Remedies, pp. 95-97. It will be noted that this description shows that heroin is not a native constituent of opium, but is a synthetic derivative of morphin. We cannot state therefore just how much opium one grain represents but can give only the relative dosage, the dose of heroin being from 0.0025 to 0.005 gm. (1/24 to 1/12 grain), while the average dose of opium is 0.06 gm. (1 grain).

The Public Service

Medical Department of the Army

Changes for the week ended Dec. 11, 1909:

Eastman, William R., capt., granted leave of absence for 2 months, when relieved from duty in the Philippines Division.

Baker, Frank C., major, granted leave of absence for 20 days.

Ruffner, Ernest L., Hallovan, Paul S., Phalen, James H., Billingslea, Charles C., capts., med. corps; and Sievers, Robert E., Koyle, Fred T., Myers, William H., 1st lieuts., M .R. C., relieved from duty in Philippines Division, March 15, 1910, and directed on arrival at San Francisco, to report to the Adjutant General of the Army for further orders.

Pipes, Henry F., capt., ordered to New York and Chicago, to study the manufacture and manipulation of the *x*-ray machine.

O'Connor, Roderic P., capt., granted leave of absence for 1 month, with permission to apply for an extension of 1 month.

Kendall, William P., major, granted 14 days' leave of absence.

Harris, H. S. T., lieut. col., detached member of examining board at San Francisco, for duty only during examinations of Captains John A. Murtagh, William H. Brooks and Robert M. Thornburgh, for promotion.

Murtagh, John A., capt., ordered to Fort Leavenworth, Kan., for duty.

O'Connor, R. P., capt., ordered to Fort Screven, Ga., for duty.

Smith, Herbert M., capt., ordered to Fort Casey, Wash., for duty.

Brechemin, Louis, Jr., capt., ordered to Army General Hospital, San Francisco, Cal., for duty.

Holmes, Thomas G., 1st lieut., M. R. C., order for honorable discharge revoked; will proceed at the expiration of his present leave of absence to Fort Sheridan, Ill., for duty.

Stuckey, Harrison W., 1st lieut., M. R. C., ordered to proceed to Fort Adams, R. I., for temporary duty.

Little, William L., capt., ordered to Fort Hood, N. Y., for temporary duty.

Kennedy, James M., major, granted 30 days' leave of absence.

Sweazey, Verge E., capt., relieved from treatment at the Walter Reed Army General Hospital, and from further duty at Plattsburg Barracks, N. Y., and ordered to the Army and Navy General Hospital, Hot Springs, Ark., for duty.

Kress, Clarence C., 1st lieut., M. R. C., resignation accepted by the President to take effect Feb. 11, 1910.

Laflamme, Frank L. K., dental surgeon, ordered to Rock Id. Arsenal, Ill., for temporary duty.

Medical Corps of the Navy

Changes for the week ended Dec. 11, 1909:

Nash, F. S., medical inspector, commissioned medical inspector from Nov. 20, 1909.

Minter, J. M., P. A. surgeon, commissioned passed assistant surgeon from Aug. 1, 1909.

Price, A. F., medical director, placed on the retired list from Dec. 13, 1909.

Public Health and Marine-Hospital Service

Changes for the fourteen days ended Dec. 8, 1909:

Cofer, L. E., asst.-surgeon-general, directed to proceed to Ellis Island and Staten Island, N. Y., on special temporary duty.

Irwin, Fairfax, surgeon, leave granted for 1 month from Nov. 22, 1909, amended to read from November 26.

Carter, H. R., surgeon, granted 10 days' leave of absence from Nov. 25, 1909, on account of sickness.

Wasdin, Eugene, surgeon, granted 1 month's leave of absence from Nov. 22, 1909, on account of sickness.

White, J. H., surgeon, granted 10 days' leave of absence from Dec. 1, 1909.

McMullen, John, P. A. surgeon, granted 7 days' leave of absence from Nov. 23, 1909, under paragraph 191, Service Regulations.

von Ezdorf, R. H., and Amesse, J. W [illegible] .led to represent the Service at the Fourth [illegible] Convention of American Republics, to be h [illegible] Rica, Dec. 25, 1909, to January 2, 1910.

Foster, M. H., P. A. surgeon, leave of absence granted for 15 days, en route, amended to read 6 days from November 12, 1909.

Billings, W. C., and Gwyn, M. K., P. A. surgeons, detailed as members of a Revenue-Cutter Service Retiring Board to meet at Arundel Cove, Md., Dec. 9, 1909.

Robinson, D. E., P. A. surgeon, granted 28 days' leave of absence from Nov. 9, 1909, on account of sickness.

McClintic, T. B., P. A. surgeon, granted 6 days' leave of absence from Nov. 19, 1909, under paragraph 191, Service Regulations.

Schereschewsky, J. W., P. A. surgeon, directed to report at Bureau on special temporary duty.

Ebersole, R. E., P. A. surgeon, leave of absence granted for 2 months from Aug. 12, 1909, amended to read 1 month and 29 days from Aug. 25, 1909.

Robertson, H. McG., P. A surgeon, granted 4 days' leave of absence from December 4, 1909.

Sweet, Ernest A., P. A. surgeon, granted 10 days' leave of absence from Nov. 25, 1909.

Marshall, E. R., asst.-surgeon, granted 1 month's leave of absence from Dec. 10, 1909.

Bailey, C. A., acting asst.-surgeon, granted 20 days' leave of absence from Dec. 12, 1909.

Deerhake, Wm. A., acting asst.-surgeon, granted 2 days' leave of absence in November, 1909, under paragraph 210, Service Regulations.

Schwartz, Louis, acting asst.-surgeon, granted 2 days' leave of absence, Nov. 24 and 30, 1909, without pay.

Wakefield, H. C., acting asst.-surgeon, granted 7 days' leave of absence from Nov. 22, 1909, under paragraph 210, Service Regulations.

BOARD CONVENED

Board of medical officers convened to meet at San Francisco, Cal., Dec. 1, 1909, for the purpose of examining an alien. Detail for the board: Passed Assistant Surgeon W. W. King, chairman; Passed Assistant Surgeon F. E. Trotter; Assistant Surgeon R. A. C. Wollenberg, recorder.

Health Reports

The following have been reported to the Public Health Service, during the week ended Dec. 3, 1909:

SMALLPOX—UNITED STATES

Alabama: Montgomery, Nov. 13-20, 12 cases; Birmingham, 1 case.
District of Columbia: Washington, Nov. 13-20, 1 case.
Florida: Jacksonville, Nov. 13-20, 1 case.
Georgia: Macon, Nov. 15-28, 5 cases.
Indiana: Muncie, Nov. 13-20, 2 cases.
Kansas: Kansas City, Nov. 13-20, 3 cases.
North Dakota: Grand Forks County, Sept. 1-30, 2 cases.
Utah, Oct. 1-31, 117 cases, 1 death, in 8 counties.
Washington: Spokane, Nov. 6-13, 1 case.
Wisconsin: La Crosse, Nov. 13-20, 1 case.

SMALLPOX—INSULAR

Philippine Islands: Manila, Oct. 9-23, 2 cases.

SMALLPOX—FOREIGN

Brazil: Bahia, Oct. 15-22, 15 cases, 10 deaths; Para, Oct. 23-30, 1 case, 1 death; Pernambuco, Sept. 1-15, 20 deaths.
China: Amoy, Oct. 9-16, 1 death.
Egypt: Suez, Oct. 14-Nov. 4, 1 case, 2 deaths.
India: Madras, Oct. 9-15, 1 death.
Italy, general, Nov. 1-14, 82 deaths; Naples, Nov. 7-14, 20 cases, 7 deaths.
Mexico: Mexico City, Oct. 2-9, 4 deaths; Oct. 16-23, 2 deaths; Monterey, Oct. 14-21, 1 death.
Persia: Guilan, province, Oct. 4, present; Mazanderan, present.
Russia: Libau, Nov. 1-7, 2 cases, 1 death; Riga, Aug. 1-31, 18 cases, 12 deaths; Sept. 1-30, 11 cases, 3 deaths.
Spain: Almeria, Oct. 1-31, 3 deaths; Madrid, 103 deaths.

YELLOW FEVER

Brazil: Bahia, Oct. 15-22, 1 case, 1 death; Manaos, Oct. 16-23, 1 death; Para, Oct. 23-Nov. 6, 8 cases, 7 deaths.
Ecuador: Guayaquil, Oct. 9-23, 6 deaths; Venezuela: La Guaira, Oct. 27-Nov. 6, 5 cases, 2 deaths, in vicinity.

CHOLERA—INSULAR

Philippine Islands: Manila, Oct. 9-16, 15 cases, 12 deaths; Oct. 16-23, 18 cases, 18 deaths; Provinces, Oct. 9-16, 308 cases, 240 deaths; Oct. 16-23, 256 cases, 202 deaths.

PLAGUE—FOREIGN

China: Amoy, Oct. 8-23, 49 deaths.
Germany: Andreischken, Nov. 7-13, 2 cases; Heydekrug, district, Nov. 18, 1 case.
India: Bombay, Oct. 12-19, 4 deaths; Madras, Oct. 9-15, 1 death.
Japan: Kobe, Oct. 30-Nov. 6, 1 case, 1 death; Moji, Oct. 6-13, 2 cases, 2 deaths; Wakamatsu, Oct. 23-30, 2 cases, 2 deaths.

PLAGUE

Brazil: Bahia, Oct. 14-22, 10 cases, 6 deaths; Pernambuco, Sept. 1-15, 1 death.
China: Amoy, Oct. 9-23, 77 deaths.
India, general, Oct. 9-16, 4,815 cases, 3,992 deaths; Bombay, Oct. 12-26, 24 deaths.
Japan: Kobe, Oct. 16-Nov. 6, 67 cases, 50 deaths; Osaka, Nov. 10, 1 case.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, January 11. Chairman, Dr. W. H. Sanders.
ARIZONA: Phoenix, January 3-4. Sec., Dr. Ancil Martin.
COLORADO: State Capitol, Denver, January 4. Sec., Dr. S. D. VanMeter, 1723 Tremont Place.
DISTRICT OF COLUMBIA: Washington, January 10. Sec., Dr. George C. Ober, 210 B Street., S. E.
ILLINOIS: Coliseum Annex, Chicago, January 19-21. Sec., Dr. J. A. Egan, Springfield.
INDIANA: Room 120, State House, Indianapolis, January 11. Sec., Dr. W. T. Gott.
MINNESOTA: State University, Minneapolis, January 4. Sec., Dr. W. S. Fullerton, 214 American National Bank Bldg., St. Paul.
NEW HAMPSHIRE: State Library Bldg., Concord, January 4-5. Regent, Mr. H. C. Morrison.
NORTH DAKOTA: Grand Forks, January 4-6. Sec., Dr. H. M. Wheeler.
OKLAHOMA: Ione Hotel, Guthrie, January 11. Sec., Dr. Frank P. Davis, Enid.
RHODE ISLAND: Room 313, State House, Providence, January 6-7. Sec., Dr. Gardner T. Swarts.
SOUTH DAKOTA: Sioux Falls, January 12-13. Sec., Dr. F. W. Freyberg, Mitchell.
UTAH: State Building, Salt Lake City, January 3. Sec., Dr. G. F. Harding, 310 Templeton Bldg.
VERMONT: Montpelier, January 11-13. Sec., Dr. W. Scott Nay, Underhill.
WASHINGTON: Spokane, January 4. Sec., Dr. J. Clinton McFadden, 503-5 People's Bank Bldg., Seattle.
WISCONSIN: Milwaukee, January 11. Sec., Dr. John M. Beffel, 3200 Clybourn Street.

Georgia Homeopathic July Report

Dr. R. E. Hinman, secretary of the Homeopathic Board of Medical Examiners of Georgia, reports the written examination held at Atlanta, July 19, 1909. The number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. Only one candidate, a graduate of Gate City Medical College, 1908, was examined, and he failed, with a grade of 68.8 per cent.

Colorado October Report

Dr. S. D. VanMeter, secretary of the Colorado State Board of Medical Examiners, reports the written examination held at Denver, Oct. 5, 1909. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. Seventeen applicants were examined, of whom 12 passed, including 1 osteopath, and 5 failed. Forty-five candidates were registered on presentation of satisfactory credentials, including state licenses. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
University of Colorado	(1909)	80.7, 85.3
Denver College of Physicians and Surgeons	(1909)	76.6, 77.1, 79.7
Denver and Gross College of Medicine	(1908) 76.4; (1909)	77.3, 77.7, 78.5, 80.
Louisville Medical College	(1906)	75.4
FAILED		
Denver College of Physicians and Surgeons	(1909)	56.7
Maryland Medical College	(1905)	66.8
Barnes Medical College	(1906)	66
Lincoln Medical College	(1908)	68.5
Meharry Medical College	(1907)	52

LICENSED ON CREDENTIALS

College.	Year Grad.	State Licenses.
Yale Medical School	(1898)	Connecticut
Rush Medical College	(1890)	Wisconsin
Northwestern University Medical School	(1901)	Indiana
Bennett Medical College*	(1894)	Nebraska
Coll. of Phys. and Surg., Chicago	(1891) (1902) (1905)	Illinois
American Medical Missionary College	(1901)	Illinois
Hahnemann Medical College and Hospital, Chicago	(1892) (1889) Iowa; (1889)	Maine
University of Iowa, Homeopathic College	(1909)	Iowa
Keokuk Medical College, College of Physicians and Surgeons	(1905) Illinois; (1906)	Iowa
Drake University, College of Medicine	(1894) Missouri; (1901)	Iowa
University of Iowa, College of Medicine	(1890)	Penna.
Hospital College of Medicine, Louisville	(1898)	Illinois
Louisville Medical College	(1890) Alabama; (1890) Virginia; (1894)	Kansas
Tulane University of Louisiana	(1903)	Alabama
Baltimore Medical College	(1896) Vermont; (1899)	Ohio
Johns Hopkins University	(1906)	New York
College of Physicians and Surgeons, Baltimore	(1902)	Kansas
Missouri Medical College	(1881) Oklahoma; (1888) Arkansas; (1891)	Missouri
Marion Sims College of Medicine	(1897)	Illinois
Univ. Med. Coll., Kansas City	(1903) Oklahoma; (1907)	New Mexico
Barnes Medical College	(1899)	Illinois
St. Louis University	(1905) Kansas; (1908)	Illinois
New York Homeopathic Med. Coll. and Hosp.	(1893)	Penna.
Bellevue Hospital Medical College	(1883)	Nebraska
University of Buffalo	(1902)	New York
North Carolina Medical College	(1905)	N. Carolina
Western Reserve University	(1888)	Utah
Medical College of Ohio	(1895)	Ohio
llege	(1879)	Ohio
llege, Philadelphia	(1896)	Penna.
Medical College	(1906)	Penna.
th	(1900)	New Mexico

District of Columbia April, July and October Reports

Dr. George C. Ober, secretary of the Board of Medical Supervisors of the District of Columbia, reports the written examinations held at Washington, April 13-16, July 13-16, and October 12-15, 1909. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75.

At the examination held April 13-16, the total number of candidates examined was 12, of whom 7 passed and 5 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
George Washington University	(1907)	76.3, 80.4
Howard University	(1908)	77.9, 78
College of Physicians and Surgeons, Chicago	(1908)	75.1
Atlantic Medical College	(1908)	80.4
Cornell University Medical College	(1907)	89.3
FAILED		
George Washington University	(1908)	70
Howard University	(1902)	73.8
Baltimore Medical College	(1907)	*† 5.8
College of Physicians and Surgeons, Baltimore	(1908)	62.9
University of Pennsylvania	(1894)	56.4

At the examination held July 13-16, the total number of candidates examined was 22, of whom 13 passed and 9 failed. The report for one candidate is not complete. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
George Washington University	(1908) 82.4, 82.7; (1909)	75.6, 76.8, 79.9, 81.2, 82.4, 83.1, 83.1.
Howard University	(1908)	87.2
Georgetown University	(1909)	75
University of Michigan, College of Medicine	(1898)	78
Jefferson Medical College	(1894)	77.3
FAILED		
George Washington University	(1908) 4.9,* 65.9,** 69.1,† 69.3; (1909)	71.5.
Howard University	(1906) 65.5;† (1909)	72.7
Maryland Medical College	(1907)	65.2
Baltimore Medical College	(1907)	‡66.3

At the examination held October 12-15, the total number of candidates examined was 23, of whom 19 passed and 4 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Howard University	(1902) 87.7; (1908) 76.9, 76.9, 78.3; (1909)	81.1.
ity	(1907) 75, 83.3; (1908) 89; (1909)	
	(1907)	87.1
	(1907)	86.7
	(1907)	75
Syracuse University	(1906)	81.7
University of Pennsylvania	(1899)	78.1
Woman's Medical College of Pennsylvania	(1909)	84.2
Hahnemann Medical College of Philadelphia	(1909)	88.6
FAILED		
George Washington University	(1908)	**66.5
Georgetown University	(1909)	71
Howard University	(1906) 71.1;‡ (1909)	61.3

* Completed one branch only.
** Second Examination.
† Third Examination.
‡ Fourth Examination.

Illinois June and July Reports

Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examinations held in Chicago, June 16-18, and July 20-22, 1909. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75.

At the examination held June 16-18, the total number of candidates examined was 291, of whom 263 passed, 27 failed, and 1 withdrew. The following colleges were represented:

College	Year Grad.	Total No. Examined.
PASSED		
George Washington University	(1908)	1
Bennett Medical College	(1909)	18
Chicago College of Medicine and Surgery	(1909)	29
College of Medicine and Surgery, Chicago	(1909)	2
Hahnemann Medical College and Hospital, Chicago	(1907) (8, 1909)	9
Hering Medical College	(1909)	6
Illinois Medical College	(1909)	8
Jenner Medical College	(1909)	5
National Medical University	(1909)	1
[illegible] Medical School	(1909)	92
[illegible] Surgeons, Chicago	(1909)	43
[illegible]	(1909)	8
[illegible]	(1906) (29, 1909)	30
Medical College of Indiana	(1896)	1
University of Louisville	(1909)	5
University of Nashville	(1909)	1
University of Toronto, Ontario	(1893)	1
University of Dorpat, Russia	(1887) (1903)	2
University of Edinburgh, Scotland	(1893)	1
FAILED		
Bennett Medical College	(1909)	5
Chicago College of Medicine and Surgery	(1909)	1
[illegible] School	(1909)	2
[illegible] s, Chicago	(1909)	4
[illegible]	(1909)	4
[illegible] Iosp., Chicago	(1909)	1
[illegible]	(1898)*	1
[illegible] College	(1891)	1
[illegible] ouisville	(1904)**	1
[illegible]	(1908) (2, 1909)	3
Meharry Medical College	(1909)	1
University of Tennessee	(1901)	1
University of Paris, France	(1892)	1
University of Dorpat, Russia	(1896)	1

At the examination held July 20-22, the total number of candidates examined was 107, of whom 83 passed and 24 failed. The following colleges were represented:

College	Year Grad.	Total No. Exam'd.
PASSED		
Yale Medical College	(1909)	1
Bennett Medical College	(1909)	4
Chicago Coll. of Med. and Surg.	(2, 1908) (14, 1909)	16
College of Medicine and Surgery, Chicago	(1909)	1
Hahnemann Med. Coll. and Hosp., Chicago	(1907) (2, 1909)	3
Illinois Medical College	(1909)	3
Jenner Medical College	(2, 1908) (4, 1909)	6
National Medical University	(1908)	1
[illegible] Medical School	(1909)	12
[illegible] d Surgeons, Chicago	(1909)	14
[illegible]	(1909)	4
[illegible]	(1909)	10
[illegible] College of Phys. and Surg.	(1907)	1
[illegible]	(1909)	1
Johns Hopkins University	(1909)	1
Maryland Medical College	(1909)	1
St. Louis College of Physicians and Surgeons	(1909)	2
Queen's University, Kingston, Ontario	(1909)	1
University of Nashville	(1909)	1
FAILED		
Bennett Medical College, Chicago	(1909)	3
Hahnemann Med. Coll. and Hosp, Chicago	(1908)* (1908)	2
Illinois Medical College	(1908)† (1909)	2
Jenner Medical College	(1907)* (1908) (3, 1909)	5
National Medical University, Chicago	(1907)† (1909)	2
College of Physicians and Surgeons, Chicago	(1909)	1
Keokuk Medical College, College of Phys. and Surg.	(1908)*	1
Kentucky School of Medicine	(1902)	1
Barnes Medical College	(1908)‡	1
St. Louis Coll. of Phys. and Surg.	(1906)** (3, 1909)*	4
University Medical College, Kansas City	(1897)	1
Meharry Medical College	(1909)	1

* Second examination.
** Third examination.
† Fourth examination.
‡ Fifth examination.

Marriages

Harry X. Cline, M.D., to Miss Grace Goodall, both of Marion, Ill., December 7.

Isadore Cohn, M.D., to Miss Millie Siegmund, both of New York City, November 24.

H. Hastings Wyman, M.D., Jr., to Miss Ada Miller, both of Aiken, S. C., November 25.

Augustus Stout Hunt, M.D., to Miss Tossie Mains, both of Jerseyville, Ill., December 8.

Callie A. Rennoe, M.D., to Miss Veronica Starr, both of South Bend, Ind., October 28.

John Henry Ohly, M.D., to Miss Helen Hallowell, both of New York City, November 27.

Melvin John Rowe, M.D., Kalamazoo, Mich., to Miss Derthick of Ionia, Mich., November 25.

Henry Alan Naylor, M.D., Pikesville, Md., to Miss Louise Requardt, at Baltimore, December 3.

John Jacob Rudin, M.D., Galesville, Ill., to Miss Jessie M. Nash, of Mansfield, Ill., November 13.

Royale Hamilton Fowler, M.D., to Miss Lillie Marshall, both of Brooklyn, N. Y., November 24.

Douglas C. Ramsey, M.D., Mount Vernon, Ind., to Miss Rose Shellen, of Evansville, Ind., December 1.

Robert C. Kirkwood, M.D.,, Boykins, Va., to Miss Rose Eleanor Phasey, of Norfolk, November 18.

John W. Turley, M.D., Desloge, Mo., to Miss Lillian Boyd, of Esther, Mo., at St. Louis, November 18.

Henry Frost Hooker, M.D., Danville, Ill., to Miss Nellie McGrath, of Green Bay, Wis., November 25.

James Alexander Harvey, M.D., to Miss Regina Jones, both of Chicago, at New York City, November 30.

Harry P. Shugerman, M.D., U. S. Army, to Miss Eleanor C. Grubb, at Port McHenry, Md., November 8.

Thomas Barnes Futcher, M.D., Baltimore, to Miss G. Marjorie Howard, of Montreal, Que., November 24.

Henry L. Brown, M.D., U. S. Army, to Miss Florella Frederika Lightbourne, of Key West, Fla., November 13.

George Oliver Sharrett, M.D., Cumberland, Md., to Miss Eva Gertrude Basford, at Baltimore, November 24.

Allen Henry Wright, M.D., Stamford, Vt., to Miss Charlotte Frances Park, of Waterloo, N. Y., November 17.

John L. Conover, M.D., to Miss Hattie Eaton, both of North Crandon, Wis., at Menominee, Mich., November 23.

Hugo Abraham Freund, M.D., Detroit, Mich., to Miss Hortense Goldsmith, of Ligonier, Ind., at Detroit, November 9.

Michael J. Shaughnessy, M.D., Wabasha, Minn., to Miss Mae C. O'Brien, of South Framingham, Mass., November 23.

Abraham Nowell Creadick, M.D., Portland, Ore., to Miss Emma Greenwood DeBow, of Philadelphia, Pa., November 23.

William Ellicott Tyson, M.D., Detroit, Mich., to Miss Elizabeth McPherson Weems, at Washington, D. C., November 27.

Thomas Rollins Marshall, M.D., Richmond, Va., to Miss Sue Seddon Taliaferro Wellford, of Gloucester county, Va., at Richmond, November 23.

Deaths

Andrew Caldwell Mailer, M.D. Rush Medical College, Chicago, 1878; Bellevue Hospital Medical College, New York City, 1882; a member of the American Medical Association and National Association of Railway Surgeons; past president of the Fox River Valley Medical Society; local surgeon of the Chicago, Milwaukee and St. Paul Railway at DePere, Wis.; for several years superintendent of the public schools of the city and president of the school board; a member of the state senate from the second district in 1897 and 1899, and twice mayor of DePere; died at his home, December 3, from tuberculosis, aged 56.

William H. Sheets, M.D. Cincinnati College of Medicine and Surgery, 1862; a member of the Indiana State Medical Association; assistant surgeon U. S. Army throughout the Civil War; secretary of the Clark County, Ind., Board of Health; a member of the Jeffersonville Board of Health for twenty years, and formerly ten years city health officer; at one time physician to the Indiana State Prison, South Jeffersonville, and for several years a member of the local pension board; a licensed minister of the Methodist Episcopal church; died at his home, December 1, from tuberculosis, aged 76.

George Zigler Bretz, D.D.S., 1851; M.D. Long Island College Hospital, Brooklyn, N. Y., 1864; major and surgeon in the One Hundred and First Pennsylvania Volunteer Infantry; afterward post surgeon of the Naval Hospital, Plymouth, N. C.; assistant surgeon of the Seventh Pennsylvania Volunteer Cavalry during the Civil War; for five years adjunct surgeon to the Long Island College Hospital; health inspector of Brooklyn, N. Y.; and formerly a member of the Medical Society of the County of Kings; was found asphyxiated by gas in his room in Brooklyn, December 4, aged 84.

Colin Charles Sewell, M.D. University [illegible] land, 1864; McGill University, 1869; [illegible] colonel and surgeon to the Royal Canad[illegible] with active service during the Riel rebellion in 1885; principal medical officer of the Quebec District; a governor of the College of Physicians and Surgeons, Quebec; died at his home in Quebec, December 1, from pneumonia, aged 68. He was given a military funeral and the pallbearers were selected from the officers of the permanent and volunteer corps.

Milton Smith Pixley, M.D. Miami Medical College, Cincinnati, 1866; a member of the Ohio State Medical Association; hospital steward of the Ninety-first Ohio Volunteer Infantry during the Civil War; formerly city physician and a member of the city council and school board of Portsmouth, Ohio; one of the organizers of the Hempstead Academy of Medicine; and secretary of the Scioto County Medical Society; died at his home in Portsmouth, November 29, from cancer, aged 67.

Erasmus Darwin Leavitt, M.D. Harvard Medical School, Boston, 1870; formerly a member of the American Medical Association; a member and first president of the Montana State Medical Association; a pioneer physician of Montana; member of the first two legislatures of the state, and formerly president of the State Board of Medical Examiners; died at his home in Butte, November 30, from carcinoma of the liver, aged 78.

Thomas Griswold Comstock, M.D. Washington University, St. Louis, 1849; Doctor of Midwifery and Master in Obstetrics; Imperial Royal University of Vienna, Austria, 1856; Hahnemann Medical College, Philadelphia, 1851; consulting physician to the St. Louis Free Hospital, and president of the medical staff; physician to the Good Samaritan Hospital; died at his home in St. Louis, December 1, from nephritis, aged 84.

John Perkins Furniss, M.D. New Orleans School of Medicine, 1866; a member of the American Medical Association; a member of the State Board of Censors and Medical Examination; assistant surgeon in the Confederate Service from 1862 to 1865; grand senior life councilor of the Medical Association of the State of Alabama; died at his home in Selma, December 3, aged 68.

Samuel Brightwell Smallwood, M.D. New York University, New York City, 1864; a member of the Medical Society of the State of New York; of Astoria, Long Island City, N. Y.; a member of the consulting board of the New York Eye and Ear Hospital; died in the Post-Graduate Hospital, New York City, November 28, after an operation for ptomaine poisoning, aged 69.

Robert Paine Wendell, M.D. Georgetown University, Washington, D. C., 1892; of Aberdeen, Miss.; a member of the American Medical Association; local surgeon for the Frisco System; was shot, beaten and stabbed to death, November 28, in a hotel in Aberdeen, by a patient who was suffering from alcoholic mania, aged 42.

Frederick Bostock Webb., M.D. University College of Medicine, Richmond, Va., 1901; a member of the Medical Society of Virginia; for several years a missionary in China; since 1902, physician in charge of the Roanoke City Smallpox Hospital; died in the Relay Sanatorium, near Baltimore, December 3, aged 43.

Levin Gillis Owings, M.D. University of Maryland, Baltimore, 1900; of Glenelg, Md.; formerly a member of the American Medical Association; a member of the Medical and Chirurgical Faculty of Maryland; died at the home of his father in Roxbury Mills, November 30, from tuberculosis, aged 33.

Hiram W. Gordon, M.D. University of Pennsylvania, Philadelphia, 1858; formerly a member of the American Medical Association; a member of the Medical Society of Virginia; died at his home in Madison, April, 1908, from cerebral embolism, due to valvular disease of the heart, aged 76.

Pierre A. Banker, M.D. New York Homeopathic Medical College, New York City, 1879; a member of the American Medical Association; excise commissioner-elect of Elizabeth, N. J.; a veteran of the Civil War; died suddenly at his home in Elizabeth, December 2, from angina pectoris, aged 63.

Sophia Presley, M.D. Womans Medical College of Pennsylvania, Philadelphia, 1879; a member of the Medical Society of New Jersey; formerly instructor in surgery in her alma mater; died suddenly at her home in Camden, November 28, from heart disease, aged 65.

David Bennett, M.D. Bellevue Hospital Medical College, New York City, 1866; formerly of Richmond and Lexington, Ky.; at one time president of the National Exchange Bank of Lexington; died in a private sanitarium at Atlanta, Ga., December 2, from gastritis, aged 68.

Junius L. Mann, M.D. Medical College of the State of South Carolina, Charleston, 1901; of Anderson, S. C.; a member of the South Carolina Medical Association; died suddenly at the home of his father in West Union, S. C., November 29, from heart disease, aged 31.

Frank Hickman Matlack, M.D. University of Pennsylvania, Philadelphia, 1872; a member of the Medical Society of the State of Pennsylvania; for twenty years a practitioner of Turtle Creek; died at his home in East End, Pittsburg, November 30, aged 67.

George LeHouillier (license, Mo., 1897); a member of the Florrisant, Mo., Board of Health; for many years house physician to the Loretto Academy and St. Stanislaus Seminary; died at his home, November 25, from rheumatic endocarditis, aged 51.

Henry C. Crowder, M.D. Rush Medical College, Chicago, 1874; a member of the American Medical Association; local surgeon of the Southern Pacific Railway at Tracy, Cal.; died at his home in that city, November 28, from heart disease, aged 65.

Joseph C. Grant, M.D. Kentucky School of Medicine, Louisville, 1896; formerly of Lena, Wis.; a member of the American Medical Association; died at the home of his sister in Livingston Manor, N. Y., November 28, from influenza, aged 40.

Lycurgus Thomas, M.D. University of Tennessee, Nashville, 1907; physician in charge of the Woodward Iron Works, Dolomite, Ala.; died in the city Hospital, Bessemer, Ala., November 25, from typhoid fever, aged 25.

William J. Laird, M.D. College of Physicians and Surgeons, Chicago, 1896; formerly surgeon for the Bay de Noc Company, at Nahma, Mich.; died in Englewood, Chicago, November 15, from pulmonary tuberculosis, aged 45.

Harry Milton Davison, M.D. Western Pennsylvania Medical College, Pittsburg, 1897; formerly of Franklin, Pa.; died at his home in York, Pa., November 22, from acute mania, said to have been due to alcoholism, aged 38.

Franklin Hinkle, M.D. University of Pennsylvania, Philadelphia, 1846; a member of the American Medical Association; assistant surgeon during the Civil War; died at his home in Columbia, Pa., December 2, aged 85.

Stephen Dudley Harrell, M.D. Medical College of the State of South Carolina, Charleston, 1889; a member of the South Carolina Medical Association; died at his home in Lamar, November 29, aged 48.

William E. King, M.D. University of Tennessee, Nashville, 1898; of Lafayette, Tenn.; while riding through the public square of that place, November 27, was shot and instantly killed, aged about 40.

William Augustine Daniel, M.D. Savannah (Ga.) Medical College; a Confederate veteran; died at his home in Jacksonville, Fla., April 7, from chronic hepatitis, due to malarial toxemia, aged 74.

John Clinton Barnes (license, years of practice, Ill., 1877); for forty-four years an eclectic practitioner of Illinois; died in a hotel in Arcola, November 23, from acute nephritis, aged 74.

Micajah Quincy Holt, M.D. Jefferson Medical College, Philadelphia, 1849; of Wakefield, Va.; died in Newport News, Va., November 6, from cirrhosis of the liver, aged 83.

Thomas B. Hicks, M.D. Cleveland (Ohio) Medical College, 1872; died at his home in New Haven, Ill., December 3, from injuries inflicted by an insane patient, aged 68.

Isabella M. Wilson, M.D. New York Medical College and Hospital for Women, 1894; died at her home in Middletown, N. Y., November 30, from pneumonia, aged 58.

Wiley Van Buren Turner, M.D. University of Nashville and Vanderbilt University, Nashville, 1860; died at his home in Greenway, Ark., November 26, aged 75.

Thomas Jefferson Glines, M.D. Dartmouth Medical School, Hanover, N. H., 1853; an eclectic practitioner of Hebron, N. Y.; died at his home recently, aged 82.

Thomas A. White, M.D. Medical College of Indiana, Indianapolis, 1881; died suddenly at his home in Noblesville, Ind., December 3, from asthma, aged 61.

Oscar Green Chamblee, M.D. University of Nashville, Tenn., 1907; of North Birmingham, Ala.; died November 28, at a hospital in Birmingham, aged 26.

Joseph A. Pujos, M.D. Tulane University, New Orleans, 1896; formerly of Schriever, La.; died at his home in Thibodeaux, November 30, aged 47.

John Odie Grove, M.D. University of the South, Sewanee, Tenn., 1904; died at his home in Bradenville, Pa., November 25, from pneumonia, aged 32.

Edward Ayres Russell, M.D. Kentucky School of Medicine, Louisville, 1893; of Butler, Pa.; died in Cambridge Springs, Ohio, November 29, aged 40.

John C. Miller, M.D. Kentucky School of Medicine, Louisville, 1907; of Weeleetka, Okla.; was shot and killed near that place, August 25, aged 29.

Donald A. MacPherson, M.D. Long Island College Hospital, Brooklyn, 1895; died at his home in Brooklyn, November 30, from pneumonia, aged 43.

George W. Nyce, M.D. Pennsylvania Medical College, Gettysburg, 1857; died at his home in Cohoes, N. Y., November 19, from paralysis, aged 74.

James Walker Evans, M.D. Missouri Medical College, St. Louis, 1868; died at his home in Kirkwood, Mo., November 22, from diabetes, aged 63.

John Calvin Cochran, M.D. Barnes Medical College, St. Louis, 1901; of Burkett, Texas; died suddenly in Coleman, Texas, November 23, aged 53.

John A. Fitzpatrick (license, Ill., 1880); of Lemont, Ill.; died in St. Joseph's Hospital, Joliet, Ill., December 1, from hemorrhage, aged 55.

Garnet P. Hyndman, M.D. Michigan College of Medicine and Surgery, Detroit, 1896; died at his home in Minot, N. D., recently, aged 37.

Charles Oscar Hawkins, M.D. New York University, New York City, 1873; of Brooklyn, N. Y.; died in Hoboken, N. J., October 3.

Thomas J. Meek (license, Miss.); died at his home near Courtland, Miss., September 27, from cirrhosis of the liver, aged 55.

Robert S. Brice, M.D. Kentucky School of Medicine, Louisville, 1882; died at his home in Keota, Iowa, November 23, aged 75.

David Zimbleman, M.D. Russia; died at his home in New York City, November 5, from heart disease, aged 32.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

The Duty of the State to the Sick

The following extract from the *Bulletin of the North Carolina Board of Health* for October, is not only of interest as showing the attitude of the health authorities in the South regarding Mr. Rockefeller's gift of $1,000,000 for the extermination of the hookworm disease but also contains several points which may be of value to those interested in the campaign for better health conditions in other states:

ONE MILLION DOLLARS' WORTH OF STOCK IN PUBLIC HEALTH

On the 26th of October a man whom all the world recognizes as one of the shrewdest business men that ever lived decided to invest one million dollars in public health.

This unprecedented investment should suggest to the public mind several interesting and significant inquiries: *First,* did Mr. Rockefeller put a million dollars in something that will not bring the desired returns? *Second,* did Mr. Rockefeller invest one million dollars in something theoretical, something nothing more than the dream of an idealist, something impracticable? Did this shrewd, calculating business man, for once, disregard all precedent and invest this sum of money without thoroughly investigating the value of his investment? Judging from his letter, he did not, for in this letter he says: "For many months my representatives have been inquiring into the nature and prevalence of "hookworm disease" and considering plans for mitigating its evils. I have delayed action in this matter only until *the facts as to the extent of the disease could be verified and the effectiveness of its cure and prevention demonstrated.*" (The italics are ours.) It is therefore apparent that Mr. Rockefeller did not take any one's word for the loss of health and life from hookworm and the practicability of its cure. He made his own investigation, and arrived at results that justified this reckless (?) investor in putting up one million dollars for the sanitary war against hookworm.

Now, scientists have for several years been claiming just what Mr. Rockefeller "verified" and "demonstrated," and, on these claims they have urged state governments to appropriate money for the preservation of such a cheap thing as human health and life. On the other hand, state governments, judging from their appropriations for different purposes, have considered it better business to spend the state's money on trees, plants, animals, birds, etc., as is well illustrated by the following story:

The Young Mother and the Fat Hog—Not a Fable; Simply Straight Goods

One time a little mother, who was only twenty-five years old, began to feel tired all the time. Her appetite had failed her for weeks before the tired feeling came. Her three little girls, once a joy in her life, became a burden to her. It was "Mamma," "Mamma," all day long. She never had noticed these appeals until the tired feeling came. The little mother also had red spots on her cheeks and a slight dry cough. One day, when dragging herself around, forcing her weary body to work, she felt a slight but sharp pain in her chest, her head grew dizzy and suddenly her mouth filled with blood. The hemorrhage was not severe, but it left her very weak. The doctor she had consulted for her cough and tired feeling prescribed bitters made of alcohol, water and gentian. This gave her false strength for a while, for it checked out her little reserve. When the hemorrhage occurred, she and all her neighbors knew she had consumption, and the doctor should have known it and told her months before.

Now she wrote to the State Board of Health and said: "I am told that consumption in its early stages can be cured by outdoor life, continued rest, and plenty of plain, good food. I do not want to die. I want to live and raise my children to make them good citizens. Where can I go to get well?" The reply was: "The great Christian State of Indiana has not yet risen to the mighty economy of saving the lives of little mothers from consumption. At present, the only place where you can go is a grave. However, the state will care for your children in an orphan asylum after you are dead, and then in a few years, a special officer will be paid to find a home for them. But save your life—never. That is a cranky idea;" for a member on the floor of the Sixty-first Assembly said so. "Besides," said he, "it isn't business. The state can't afford it." So the little mother died of the preventable and curable disease, the home was broken up, and the children were taken to the orphan asylum.

A big fat hog one morning found he had a pain in his belly. He squealed loudly and the farmer came out of his house to see what was the matter. "He's got the hog cholery," said the hird man. So the farmer telegraphed Secretary Wilson of the U. S. Agricultural Department (who said the other day he had 3,000 experts in animal and plant diseases), and the reply was: "Cert., I'll send you a man right away." Sure enough, the man came. He said he was a D.V.S. and he was, too. He had a government syringe and a bottle of government medicine in his handbag, and he went for the hog. It got well. It wasn't cranky for the government to do this, and it could afford the expense, for the hog could be turned into ham, sausage, lard and bacon. Anybody, even a fool, can see it would be cranky for the state to save the life of a little mother, and it could not afford it, either.

MORAL: Be a hog and be worth saving.

(The background of this story is laid in Indiana, but its truth applies with equal force to our own state. For while Indiana is spending $43,500 annually on her public health, North Carolina is spending the extravagant sum of $8,500 annually on our public health.)

Now, from what has been said, it is very evident that there exists a very great difference of opinion between John D. Rockefeller and the average state government as to the value of public health. Either one or the other has made a big mistake, and if the oil king has made a bad business move, it is about his first one. Whatever many people may think of his business methods, it would be rather difficult to find a sensible person who questions his business sense.

It is believed this gift will serve its chief purpose, not in the eradication of hookworm, which it will to a large extent accomplish, but as a demonstration to state governments of the value of human health and life. And when that good day arrives, legislatures will investigate and verify the unanimous conclusion of scientists and statisticians, namely, that our country is losing 250,000 lives or their equivalent, $400,000,000 from sickness every year. Then in a great sanitary war against preventable disease, state governments will honor John D. Rockefeller by following his lead.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Fourth Month—Fourth Weekly Meeting

Treatment of Pelvic Inflammation

Non-Surgical: General: Local, douche, tampon, massage, etc.

Surgical: Routes of Operation.—Abdominal section, technic of removal of appendages, of salpingo-oöphorectomy. Technic in (a) pus cases, (b) in adhesions, (c) in hemorrhage, (d) in intestinal opening. Indications and technic in abdominal hysterectomy.

Vaginal Section: Indications for (a) posterior, (b) anterior vaginal section. Technic of vaginal hysterectomy by (a) ligature, (b) forci-pressure. Indications for vaginal incision and drainage. Relative advantages and disadvantages of abdominal and vaginal routes.

Monthly Meeting

Diagnosis and Treatment of Tuberculous Salpingitis.
Indications and Contraindications for Curettage.
Diagnosis of Pelvic Inflammation.

Fifth Month—First Weekly Meeting

General Subject for the Month: Diseases of the Stomach, Intestines and Pancreas

Anatomy

Surface Anatomy: Stomach, cardiac and pyloric orifices, curvatures. Small intestine. Large intestine. Cecum and appendix, ascending, transverse and descending colon, sigmoid. Pancreas.

Gross and Microscopic Anatomy: Stomach. Important relations. Structure, serous, muscular, submucous and mucous coats. Glands, cardiac and pyloric. Blood-vessels, lymphatics and nerves. Small intestine. Duodenum, jejuno-ileum, length, relations, limits, diameters, mesenteric attachments, blood-vessels, nerves and lymphatics. Structure, serous, muscular, submucous and mucous coats. Valvulæ conniventes, villi crypts of Lieberkühn, Brunner's glands, lymph follicles. Large intestine. Portions, length, diameters, mesentery. Characteristics, bands, sacculations, appendices, epiploicæ. Difference in structure from small intestine. Blood-vessels, lymphatics, nerves. Pancreas. Location, length, size, portions, ducts, microscopic structure, blood-vessels, lymphatics.

Physiology of Digestion

Mastication and Salivary Digestion

Gastric Digestion: Effect of pepsin and hydrochloric acid, of rennin. Effect on other foods. Absorption from stomach. Movements of the stomach.*

Intestinal Digestion: Pancreatic secretion, composition, three enzymes, secretin and mechanism of pancreatic secretion, enterokinase, effect of each enzyme in digestion. Succus entericus, enzymes present and functions of each. Intestinal movements, peristaltic and pendular. Absorption from intestine of carbohydrates, of fats, of proteins. Digestion and absorption in large intestines.

REFERENCE BOOKS FOR THE FIFTH MONTH

Hemmeter: Diseases of the Stomach and Intestines.
Boas: Diseases of the Stomach; of the Intestines.
Einhorn: Diseases of the Stomach and Intestines.
Nothnagel's Practice.
Opie: Diseases of the Pancreas.
Billings: Diseases of the Digestive Tract.

Society Proceedings

COMING MEETINGS

American Physiological Society, Washington, D. C., December 28-30.
Medical Society of State of New York, Albany, January 25.
Western Surgical and Gynecological Assn., Omaha, December 20-21.

AMERICAN ACADEMY OF MEDICINE

Third Mid-Year Meeting held at New Haven, Conn., Nov. 11-12, 1909

CONFERENCE ON PREVENTION OF INFANT MORTALITY

(Continued from page 2028)

The Relation of Syphilis to Infant Mortality

Dr. Richard A. Urquhart, Baltimore: Of all the grave consequences following on this one of the modern plagues, none are so serious as those of heredity. The high rate of infant mortality among the children of such parents is its greatest social danger. Many others, fortunate or unfortunate enough to survive its first effects, grow into a weakling childhood and manhood. a misery to themselves and a public charge. Few greater problems offer themselves to the philanthropist, to the social worker, the teacher and the state. The false position assumed toward social diseases by the authorities and the consequent ignorance of the far-reaching effect of such diseases is an everlasting disgrace to our modern civilization. It is high time that physicians, knowing its perils, force on the powers that be the right of the public to protection, as in the case of any other contagious disease. The details of the required laws and methods of making them efficient will work themselves out. It is not merely prohibiting a fool from his folly; frequently the innocent suffer; the state has to support weaklings, and racial degeneracy results.

DISCUSSION

Dr. Helen C. Putnam, Providence, R. I.: Syphilis should be placed among the reportable diseases.

Dr. R. A. Urquhart: In view of the dread of publicity felt by persons suffering from syphilis, there is danger that they would not seek medical aid, and the result would be worse than if there were no report.

Dr. J. Morton Howell, Dayton, Ohio: One solution of the problem would be the introduction of courses of lectures by the medical inspectors into the curricula of boys in high schools.

The Curative Powers in Human Milk

Dr. J. Madison Taylor, Philadelphia: Scientific substitute infant feeding, primarily a boon, often proves a peril. Physicians are lulled into a false sense of security and too readily allow mothers to omit breast-feeding. Mothers, both rich and poor, too often assume that it is just as well to use the bottle, thus imperiling life and health, and especially right constitutional development. Sifting the evidence emphasizes (1) the well-known but inadequately realized fact that breast-feeding is of paramount value, not only as a food, but as contributing to prevention and cure of infectious and other diseases; and (2) the testimony from physiology as to the curative powers residing in the autoprotective qualities of the serum of milk, especially human milk.

Excessive Child-Bearing as a Factor in Infant Mortality

Dr. Alice Hamilton, Chicago: This paper embodies the results of a statistical study of 160 families with regard to the number of children born and the number who died at birth, in infancy or in early childhood. The families selected were almost all from the poorer wage-earning class, the parents being foreign born in all but 3 per cent. Families with 6 children and over were placed in one group, those with 4 children and less than 4 in another group. The percentage of child mortality in the first group was over two and one-half times that in the second group. As the nationality, economic standing, mode of life and knowledge of infant hygiene was the same for the two groups, the explanation of this great mortality in the larger families lies probably in the insufficient care given to the over-numerous children and in the exhaustion of the mothers through excessive child-bearing. Grouped according to nationalities, the Jews show the lowest child death-rate, with the American-born next; the Italians the highest and the Germans, Irish and Slavs ranging in between in the order named.

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* Howell: Physiology, 2d Edition, p. 661.

DISCUSSION

Dr. T. Smith, Worcester, Mass.: I have made a study of the mortality among the wives of college graduates, Yale and Harvard graduates, going back 200 years, and have found that 33 per cent. died before they were 35 years old. I discovered also, in tracing out the records of some of the old New England families for a number of generations, that the large families seemed to tend to be extinguished by the fourth or fifth generation. For example, in one family, there were 20 children; 8 by the first wife and 12 by the second, but there are now no living descendants except through one son. In a second family of 10 children, the mother died at the age of 40. Of the 10 children, the 3 youngest were invalids; 2 lived to the age of 30; 8 married. Of these marriages there are only 3 descendants surviving.

The Waste of Infant Life

Dr. Edward T. Devine, New York: It is sufficiently obvious that the enormous waste of infant life is a social problem of fundamental importance. Just how enormous the waste is we cannot exactly determine. It begins with the abortions and miscarriages which have been estimated to be the end of one pregnancy out of every five. It includes next the children born dead, though at full term, which happens, as nearly as we can tell, in about one case in twenty-eight. And the total is made up by the great numbers of babies born alive who die before they reach the age of 1 year. In New York one-seventh of all the babies born die before they are a year old, and their deaths make up between one-fifth and one-fourth of the total mortality. An encouraging decrease can be seen in New York in the last forty years. Between the decades 1866-75 and 1896-1905 the infant death-rate decreased 43 per cent., while the general death-rate decreased only 26 per cent. In spite of this decrease it is the opinion of the medical experts that a large part of the infant deaths which now take place are preventable. The social economist adopts the medical expert's opinion, and it is his part to devise means for preventing that part of the preventable waste which is due to adverse social conditions. "Prevention of infant mortality" is the subject of the conference, but that is not the ultimate object. The phrase is symbolic, suggestive, for the important thing is not merely to prevent babies from dying, but to keep them well and increase their strength, to give them the best possible beginnings for their lives. The efforts which give promise of the best and quickest returns are those which will decrease the proportion of premature and immature babies born, and will increase the proportion who are fed properly through their first year.

The Relation of Race to Infant Mortality

Dr. Richard C. Cabot, Boston: This paper embodies the results of an examination of the vital statistics of Boston. Three thousand two hundred and ninety certificates of the board of health were studied for three wards of the city—one almost entirely Jewish, a second almost entirely Italian and a third almost entirely Irish. Excluding premature births and stillbirths, the infectious, diarrheal and digestive diseases make up about one-half of the total figures and the stillborn cases one-fifth; the premature and stillborn combined, about one-third. The mortality from pneumonia and tuberculosis represented more than two-thirds of the total mortality from all the infectious diseases reported to the board of health. In spite of the fact that the Jewish race is not supposed to be especially prone to alcoholism and syphilis, it was found that the proportion of stillbirths in Jewish families was 64 per 1,000 births; Italian, 41 per 1,000; Americans and Irish, lower. In birth accidents and in digestive diseases, the figures for the Jewish race were in the lead. The mortality from digestive diseases, excluding infectious diseases, was 54 per 1,000 births among the Jewish families; 35 per 1,000 among the Irish; 31 among Italians and 29 among Americans.

A Program for the Reduction of Infant Mortality in New York City

Mr. Robert W. Bruère, general agent of the New York Association for Improving the Conditions of the Poor: The problem of infant mortality in New York City is primarily a problem of poverty. This statement is based on the records of the New York Department of Health. The evolution of the campaign against infant mortality among the poor is illustrated by the work of the New York Association for Improving the Condition of the Poor. There are fresh-air pleasure parties at Sea Breeze, Coney Island. Sea Breeze has been partially changed from a picnic ground into a summer convalescent home and school for mothers. Summer district work has been started at Junior Sea Breeze in the heart of the city. All-year-round follow-up work has been inaugurated in connection with children's dispensaries, and infants' milk depots have been established by the New York Milk Committee. Impure milk and low wages are factors in determining the infant death-rate.

In view of the fact that 46 per cent. of the workers in New York receive less than $10 a week or $300 *per annum*, less than the sum given in the report of the Committee on the Standard of Living prepared by the New York Conference of Charities and Corrections and published by the Sage Foundation, as necessary to keep body and soul together, there should be a system of compulsory sick insurance, similar to that in practice in Germany. This insurance should be contributory; part provided out of the general taxation, and to a lesser extent out of the premiums paid by policy holders. The insurance should be compulsory for all persons with incomes less than $1,000 a year.

Educational Responsibilities of a Milk Depot

Dr. Ira S. Wile, New York: The educational possibilities of a milk depot are the only limits to its educational responsibility. Its possibility is that of making milk depots unnecessary institutions. Its function should not be merely to supply a milk for infant feeding, but at least to teach mothers why it is supplied. Its responsibility is three-fold: to the infant, to the family, to the community. To the child the responsibility of the milk depot lies in attempting to supply a proper milk, i. e., its own mother's milk. An index of the value of a depot lies in the number of nursing mothers visiting it; not in the amount of modified milk sold. At each depot there should be a museum to exhibit all that relates to child hygiene from the prenatal period to the school period. To the family the depot is responsible for teaching the whole household how to keep the children well—not merely how to avoid letting them die. There should be classes for "little mothers" and expectant mothers, as well as for mothers with children. Toward the community the depot has the responsibility of developing mothers capable of bringing up their children to maturity, and of destroying the possible element of truth in the statement that children grow up in spite of their parents, not by means of them.

The Responsibilities of General Relief Agencies in Prevention of Infant Mortality

Mr. Sherman C. Kingsley, superintendent of the United Charities of Chicago: The particular responsibility of relief agencies lies in the fact that their work is in the very homes where babies die in largest numbers. Our philanthropy and our municipal housekeeping ought to be brought to this test: Do they furnish conditions that are right for the baby? Where the white hearse goes most often, there you will find the weakest places in your municipal housekeeping. The charity organization society, or similar agency, is the natural agency to arouse public interest in the question of infant mortality in a city where it has received scanty attention. In such a place it will probably run afoul of the question of registration of births, of general insanitary conditions, of the problem of desertion, of the problem of the registration of midwives. There are also certain pressing and immediate responsibilities resting on charitable organizations in connection with their own special work: they should not send pregnant women to wash and scrub; they should make possible a reasonable period of convalescence after the baby is born; they should see to it that the family lives in rooms consistent with health for the baby; they should not encourage a mother to wean her baby in order to go back to work; they should see to it that the mother herself is properly nourished; they should continue the visits of the nurse until the mother has profited by her instructions; they should be more patient in winning the confidence of the foreign mothers and teaching them. The conclusion of the whole matter may be suggested in the homely annals of one baby who died: begotten of a father who deserted before the baby came; born in an insanitary, three-room tenement house; attended by a midwife, who was unlicensed and ignorant; unrecorded in the city's book of births; suffered on account of feeding which was in accordance with the traditions of its mother and because she had to earn a living; died without ever having had a drink of water; furnished with a funeral that further impoverished the family.

Results of Philanthropic Experiments in Increasing and Decreasing Infant Mortality

Dr. Woods Hutchinson, New York: The progress of civilization has markedly diminished infant mortality, but not at so great a rate as other mortality. The institutional treatment of infants is almost entirely a failure. There is no place like home for growing live children. The chief causes of infant mortality are poverty with its children, ignorance and dirt. The cure is higher wages and shorter hours. Cheap food is usually deficient in nutritive value. Nursing mothers and children must have expensive foods. Any effort helping mothers to work instead of nursing their babies is a mistake. Prizes for large families are a mistake. The death-rate is high in families too large to be properly cared for.

Institutional Prevention of Infant Mortality

Mr. Homer Folks, secretary of the New York State Charities Aid Association: In institutions for providing a home for presumably well infants, mortality has always tended to be very high. Of 28,436 babies received at the St. Petersburgh Foundling Hospital, 24,272 died, 85 per cent. In such institutions mortality has been reduced, but is still excessively high, not more than 50 per cent. surviving among the best institutions. This is not from neglect. Artificial feeding kills babies in infant homes. Babies and their mothers should be kept together. Hospitals for sick babies are necessary and valuable.

Providing Situations for and Otherwise Assisting Homeless Mothers with Their Infants

Miss Mary R. Mason, agent of the Committee on Assisting and Providing Situations for Mothers with Infants, New York City: The death-rate is frequently from 90 to 100 per cent. when babies are separated from their mothers. Agencies find it entirely practicable to place women with babies in domestic service, chiefly in the country or small towns, with wholesome environment. Increasing stringency in the domestic service market increases desirable opportunities. The Philadelphia Society, 1908, placed 609 mothers. In 15 years the New York Agency has provided over 7,000 situations. Statistics are difficult to present, as the situation is usually only temporary (until father obtains work, or families are reconciled; many widowed or unmarried marry). In three years (1900-1902) of the mothers kept track of, four-fifths of the babies lived and were in good condition; one-fifth died or were in poor condition. Agencies need closer cooperation with maternity hospitals to induce mothers to keep, not abandon their babies; more temporary homes; more places for training incompetent mothers. The plan of keeping mothers and babies together is susceptible of much wider application.

DISCUSSION

Mr. E. D. Solenberger, Philadelphia, approved of the placing-out system, but recommended that a most careful and discriminating examination be made by the hospital physician of mother and child before sending out to a situation; and emphasized the need for greater cooperation between hospitals and similar institutions and the child-placing organizations. Statements of physicians and their recommendations as to the character of the work women were fitted to do, would be accepted by employers as authoritative, and would prevent them from giving too heavy manual work to women physically unable to perform such duties. Hospitals, on the other hand, would be more willing to care for a woman through a longer period of convalescence, knowing that the child-placing association would at the end of the time have a situation ready for the woman.

Dr. J. H. Mason Knox, Jr., Baltimore, commended the placing-out system, but said that in view of the fact that a great many children are still being cared for in institutions legislation should be enacted which should secure adequate care, the necessary amount of air space and a sufficient number of attendants for the children now in institutions. He took exception to the statement that practically all infant mortality in institutions was due to artificial feeding. That this is only partially true, he said, is shown by the fact that among the wealthier classes only a small proportion of the artificially fed babies die when they have the proper food and the necessary care. There are hundreds of asylums in our large cities which are practically death traps, not primarily because they are asylums, but because they fail to do their whole duty to the child. Inadequate care, too few nurses, in many instances an inefficient nurse maid in charge of 20 or 30 babies, instead of a trained nurse caring for 3 babies; insufficient air space, large wards with 30 or 40 babies in one room, instead of 3 or 4 babies in separate quarters, he declared to be responsible for some of the excessive mortality in institutions. These are conditions, he said, not theories, and since there is no chance that institutional care can for the present be disregarded, he urged the insistence on remedial legislation by states and health departments to make the care more adequate to the recognized needs of the child.

The Care of Infants Apart from Their Mothers

Dr. Charles P. Putnam, Boston: Foundling Hospitals are charitable in aim. The Massachusetts Infant Asylum may be used as an object lesson. For ten years it cared for all the state babies. One-half of the first 300 died. Babies are received no matter how ill. More complete investigation and cooperation by paid officers makes more admissions and sicker babies. Of the first 1,000 cases, 530 were legitimate, 470 were illegitimate and 69 were taken for adoption. No babies have been taken for adoption during the past 30 years. Of the first 1,000, 21 mothers deserted, but in the last 500 there were only 2 possible desertions. Of the first 2,000, 377 babies given away in adoption. Now the policy is quite opposite. Only those are admitted who do not properly belong elsewhere. The boarding-out system now requires the whole time of two trained nurses. Mothers are required to visit frequently. Parents and others must pay. 1. If mothers cannot be kept with babies, their interest must be kept with them. 2. This keeps as mothers' babies many that otherwise would be thrown on the public. 3. Many mothers who would have lost a bond to society now retain it.

The Care of Infants Who Must be Separated from Their Mothers Because of Some Especial Need on the Part of the Child

Dr. Emelyn Lincoln Coolidge, New York: It is a serious matter to separate a mother and her child, especially if the baby is breast-fed; but sometimes this is necessary if the mother is too poor and ignorant to care for the baby at home. Babies' hospitals are valuable for the treatment of infants who are very ill with some acute disease. If a baby cannot be nursed by its own mother and there is difficulty in feeding it artificially, it would be well to board the child with a reliable wet nurse who is under the control of a babies' hospital. Babies sick or well need individual treatment, as well as scientific and skilful care. There should be enough nurses in every hospital for babies so that they will have time to hold the patients, at least occasionally, giving them the individual attention which is many times their salvation. The patients in a babies' hospital should not only be looked on as "interesting cases," but as babies absolutely dependent on conscientious and tender care. Physicians and nurses who are to have the care of infants need special training in this particular branch of medicine. Those who graduate from a general hospital or college are not competent to assume the care of sick infants without first devoting considerable time to conscientious study of the diseases of infancy and childhood. In a babies' hospital small wards are desirable, ten or twelve beds in each ward being about the right number. If contagion then breaks out the ward may be isolated and the disease checked at the start. Plenty of fresh air and sunlight must fill all the wards.

DISCUSSION

Dr. H. J. Gerstenberger, Cleveland: An effort should be made in every city to have a babies' hospital, which should serve also as a school for the training of physicians, nurses and midwives, and which should offer post-graduate courses and furnish opportunity for research work.

Dr. J. H. Mason Knox, Jr., Baltimore: I do not consider a preliminary examination of a child before admission to a ward sufficient; the plan of many hospitals of keeping a baby in a retention room, under careful supervision, for forty-eight or seventy-two hours before admitting to the general ward, is a more effective precautionary measure than the preliminary examination alone. In the placing-out system, there is great need for careful examination of mother and child before sending out to situations or into homes. In one case a family was persuaded to take a child which was supposed to be perfectly healthy. As a result, syphilis was contracted by two members of the family which befriended the child. Owing to the difficulty in diagnosing the disease in very young infants, until the lapse of six weeks or two months at least, the placing-out system, while excellent, should not go into effect until after a certain length of time, and not until the most careful laboratory and clinical diagnosis had been made. Speaking of the work of the milk stations, the importance should be emphasized of having not only trained nurses, but of having nurses especially trained in the care of children who would give their entire time, in connection with the work of the milk station, to babies and young children, and to the instruction of the mothers.

Mrs. Mary Kincaid, New York, outlined the work of the *Delineator* in forming mothers' conferences, first in New York, and then throughout the country.

Dr. Albert Hale, Bureau of American Republics, Washington, spoke of the methods by which the infant mortality in Buenos Aires, Argentina, has been reduced to such an extent that the city has one of the lowest infant death-rates in the world. The reduction was brought about largely by means of reforms instituted by the municipality, among them the control of the milk supply, the control of the water supply and the installation of a drainage system at a cost of $50,000,000. Another factor in the reduction of infant mortality is what is known as the *assistencia publica*, which maintains laboratories, and which is educational also.

Assisting Mothers in the Care of Sick Infants in Their Own Homes

Miss Lillian D. Wald, Nurses' Settlement, New York City: An important factor in lowered infant mortality is the skilled district nurse who gives serious nursing care in the homes viz.: The daily thorough bathing, the antiseptic care of mouth, nasal passage, eyes and external excretory organs; application of medical treatment, of hydrotherapy, dressings, etc.; who keeps records and makes observations, teaches the members of family how to ventilate, prepare diet, maintain the best available surroundings, and who secures the use of all necessary equipment and appliances for comfort of the patient. An illustration of the value of such service is given by the figures of the settlement of pneumonia and bronchitis in children whose ages ranged from 2 weeks to 2 years, these figures covering only three months' time. Total number cases pneumonia and bronchitis, 156, divided as follows: Lobar pneumonia, 64 patients (died, 9; sent to hospital, 4; cured, 51); bronchopneumonia, 84 patients (died, 6; sent to hospital, 24; cured, 54); pleuropneumonia, 8 patients (died, 2; sent to hospital, 6); bronchitis, 11 patients (sent to hospital, 2; cured, 9). During the same three months there were cases of intestinal disorder of various kinds, diarrhea, dysentery, enteritis, malnutrition, colitis, thrush, etc., etc., in children of the same ages. Total, 72 children: (sent to hospital, 11; died, 7; cured, 54). Hospital cases were usually complicated by some infectious disease. The pneumonia cases were in the large majority of cases of marked severity. Many of the intestinal cases also were serious and required most careful management.

(*To be continued*)

Book Notices

Infinity or Nature's God. By F. J. Duggan, M.D., Grand Forks, N. D. Flexible Leather. Pp. 136. Price, $1.50.

If the unconscious be the highest type of humor, then in this book we have something that will inevitably add to the gaiety of nations. Not that it is written with any such intent; the author takes himself and the universe far too seriously to be guilty of perpetrating a joke intentionally. The reader is informed in the preface that this work is "a prose composition, poetic in form and scientific in character." It was written "under the impulse of an irresistible influence" while the author was "in a pleasant semiconscious reverie." Still further to divide the parental responsibility for this epic, the author states that a "strange muse, whose promptings made the task easy" is really the being "who must, most assuredly, be held responsible for the existence of the poem." In closing the preface and foreseeing the effect that his verse may have on those whose mentality is not the most stable, the author expresses the hope "that detention hospitals may be established in every county in the land for the treatment of incipient insanity." The poem begins at the Beginning. Of the creation of matter we read:

> "Ever was and is to be," describes the situation.—
> The technical terms, wrongly used, were for elucidation.

Matter having been satisfactorily accounted for, a description of the natural forces seems rational. For instance, a tornado in the author's town:

> . . . . sweeps down the street,
> With planks, chairs, and debris dancing on its spray four feet deep;
> Tin roofs, whole blocks of sidewalk are flying in the air,
> With small houses scattered to the wind my heart despairs.

Much havoc was wrought, apparently, for we read that there were

> Three killed, many injured, the train from off the track was blown;
> This certainly was the swiftest storm that ever I have known.

But it is when that mystery of mysteries—life—is touched on that the sublimest heights are reached.

> Who views the fishy tadpole would connect him with the frog,
> Anxious watching o'er his progeny while sitting on the log?
> Who sees the wriggling wiggler in the rain-barrel, ne'er at rest,
> Can see yellow fever and ague in the mosquito pest?

Nor is therapeutics forgotten; quinin is apostrophized thus:

> The parasite, the hematozoon at home in human blood,
> Is poisoned by the Jesuit-bark; it killed him where he stood.

These quotations must suffice. To analyze the entire work would require much time—and paper. As its author says, "it is readily seen the immense possibilities attending such a work." The book "was not written for remuneration" and must be read to be fully appreciated.

A Text-Book on Practical Obstetrics. By Egbert H. Grandin. A.B., M.D., Gynecologist to the Columbus Hospital. With the Collaboration of George W. Jarman, M.D., Gynecologist to the General Memorial Hospital and Simon Marx, M.D., Late Surgeon to the New York Maternity Hospital. Edition 4. Cloth. Pp. 538, with illustrations. Price, $4.50. Philadelphia: F. A Davis Co., 1909.

This edition has been revised by Dr. Simon Marx. It aims at the greatest possible directness in the statement of clinical facts and omits all anatomic, embryologic and pathologic data that are not essential. It omits all literature reference and statistical data except such as are necessary to elucidate disputed facts. Brevity, accuracy and practicability, with the avoidance of theory and hobby, are the aims striven for by the authors.

These objects have been attained with a fair degree of success and the revision has much improved the book. Certain defects have escaped the reviser. In Chapter 4 the definitions and usage of the terms "presentation," "position" and "attitude" are confused and incorrect, as for example, when the position is said to be transverse or the attitude of the fetus is transverse or longitudinal. Figure A in Plate VIII, showing the method of making abdominal palpation at the pelvic brim, is incorrect. The hands should press into the sides so as to grasp the head or presenting part instead of pressing it back. On page 152, the definition of the pelvic outlet is mistakenly given for that of the "inferior strait." On page 154, in the description of the attachments of the levator ani, it is said that this muscle is attached to the lateral walls of the vagina and to those of the bladder, a statement quite contrary to the fact. On page 159 it is correctly stated that "under normal conditions the head does not become perfectly flexed until the membranes have ruptured," then is added the obscure and incorrect statement "that is to say, descent does not begin." It is impossible to understand why Plates 23, 24 and 25, showing ungowned assistants and flexion maintained by the bare finger in the rectum, should be retained. Very few nurses would be willing to adopt the advice on page 244 to bathe the infant in water at the temperature of 80 to 90. The advised treatment of puerperal endometritis and metritis by thorough examination and intrauterine injections and curettage is opposed to the views of most modern teachers.

These faults should not disfigure a modern work on obstetrics. Their presence indicates too low an estimate of the critical demands of modern teachers of obstetrics. A greater thoroughness in the revision should have eliminated them and have left a book that would merit high commendation for its laudable aims and valuable contents.

Rational Immunization in the Treatment of Pulmonary Tuberculosis and Other Diseases. By E. C. Hort, B.A., B.S.C., M.R.C.P. Cloth. Pp. 75, with illustrations. Price, $1.50. New York: *William Wood & Co.*, 1909.

The main motive in this publication of seventy-five pages appears to be the belief that those interested in immunization, particularly vaccine therapy, do not take into sufficient consideration the possibility that disturbed enzymic action of the body cells is responsible for much of the injury which attends infections. So far as can be gathered from the somewhat involved phraseology, the assumption appears to be made that in health the enzymes of the body are held in equilibrium by antienzymes, and that in infections this equilibrium is disturbed; that the antienzymes appear to be ineffective or deficient as a consequence of bacterial action; and that this state of affairs leaves the autolytic, and perhaps other enzymes free to injure the cells of the body. On the basis of this assumption, which the author appears to accept as a fact, he deplores that we do not immunize with enzymes and emulsions of the body cells as a means of causing the further formation of antienzymes, to the end that the pernicious action of the enzymes during infection may be antagonized.

After considering briefly the subject of vaccination with cultures of bacteria (hetero-inoculation) the subject of autoinoculation is discussed. Counter-irritation, Bier's methods, active and passive movements, light and heat, respiratory exercises, radium and *x*-rays, and high altitudes, are cited as means of producing autoinoculation artificially. In such procedures, Hort believes, the micro-organisms become more or less disseminated and stimulate the formation of antibodies.

The author prefers the method of autoinoculation whenever practicable, because, in addition to causing the formation of bacteriotropic substances, it also causes the production of those substances which inhibit the pernicious activities of the body ferments. The data cited to justify the latter conclusion are far from convincing in character. The unusual position is taken that the temperature curve is a measure of the process and extent of immunization. The opsonic index is considered as an unreliable indicator of the state of the patient's resistance.

In conclusion the author states: "Full conviction I can hardly hope to carry on the slender evidence here produced, but the attempt will not be fruitless if the attention of the makers of modern medicine be for the moment diverted to issues other than the merely bacterial."

Obstetrics. A Manual for Students and Practitioners. By David James Evans, M.D., Lecturer on Obstetrics and Diseases of Infancy, McGill University, Montreal, Canada. Second Edition. Cloth. Pp. 440, with 172 illustrations. Price, $2.25 net. Philadelphia: Lea and Febiger, 1909.

In this edition of Evans' "Obstetrics," several changes have been made and certain sections rewritten. The book is now one of the best of the smaller works on the subject; it is scientific and shows the mature judgment of a large and clear observation. The various subjects are presented in a concise manner with due regard to the relative importance of the various divisions.

In the presentation of some of the debated questions of obstetrics the author in a few instances adopts views that some would criticize as insufficiently established or antiquated. For example, Williams' classification of pernicious vomiting of pregnancy into toxemia and other forms which can be distinguished by the urine examination is hardly so well established as to form an indication for treatment of the former by such a radical method as the induction of abortion.

On the other hand no well-authenticated evidence authorizes attributing "congestion or engorgement" of the breasts to exposure to cold and hypersecretion of milk. The treatment of this condition with massage, the breast-pump and pressure bandage does not furnish as satisfactory results as the more simple and rational methods of support and the application of cold. The indication for abortive treatment of mastitis, to secure complete rest for the affected gland, would prohibit the use of the second method, namely, removal of the contents of the gland by means of massage and the breast-pump. So also the arrest of lactation by compression of the breast, purgation, and the restriction of fluids ingested, the use of massage and the breast pump and the application of glycerite of belladonna is not only pretty well-known to be unnecessary, but needlessly meddlesome and unpleasant, if not harmful.

American Practice of Surgery. A Complete System of the Science and Art of Surgery, by Representative Surgeons of the United States and Canada. Edited by Joseph D. Bryant, M.D., LL.D., and Albert H. Buck, M.D. Complete in Eight Volumes. Volume VI. Cloth. Pp. 916, with 624 text illustrations, and 39 plates. Price, $7. New York: *William Wood & Co.*, 1909.

Volume 6 of this work, the previous volumes of which have already been mentioned in these pages, treats of "Prothesis in its Relation to Surgery of the Face, Mouth, Jaws and Nasal and Laryngeal Cavities," "Surgical Diseases and Wounds of the Nasal Cavities and Accessory Sinuses," "Surgical Diseases and Wounds of the Mouth, Tongue and Salivary Glands," "Surgical Diseases and Wounds of the Neck," "Surgical Diseases and Wounds of the Thyroid and Thymus," "Surgery of the Thorax and Spinal Column," "Surgical Diseases and Wounds of the Female Breast," "Surgical Diseases and Wounds of the Genitals and Vagina of the Female," "Surgical Diseases and Wounds of the Male Genital Organs," and "Chancroid, Gonorrheal Urethritis, Surgical Diseases and Wounds of the Jaw."

Some of the subjects are so comprehensively handled that the chapters amount to real monographs, thus making this volume of great value to the specialist as well as to the general surgeon. This is particularly true of the chapters on the surgical diseases and wounds of the nasal cavities and accessory sinuses. Great advances have been made during the past few years in the diagnosis and treatment of infections of the sinuses accessory to the nasal cavities, and the editors did well in allowing so much space to these important subjects.

The genitourinary surgeon likewise will find the subjects pertaining to his department very well presented. The publishers have maintained the same good standard of work as shown in the previous volumes.

A Text-Book of Surgery. By George Emerson Brewer, A.M., M.D., Professor of Clinical Surgery at the College of Physicians and Surgeons, Columbia University, New York. Second Edition. Cloth. Pp. 875, with 415 engravings and 14 plates in colors and monochrome. Price, $5. Philadelphia: Lea & Febiger, 1909.

Judging from the increased size of this book over the previous one, the author agreed with his critics that for a practical working text-book in surgery the brevity of the former edition was not commendable. In it the effort to condense was carried too far. Many important subjects were treated too briefly, and others were omitted. This fault has been remedied in the present edition. For instance, whereas only twenty lines were given to the subject of gangrene in the first edition, four pages are now devoted to it. Seven pages have been added to the chapter on tumors. The treatment of empyema is discussed far more fully than before. The same is true of many other subjects, so that the work can now be recommended as a really excellent text-book in surgery, standing midway between the brief manuals and the more voluminous treatises. No attempt is made to discuss fully all improved methods of surgical treatment, but they are mentioned; one method, the one most in vogue, is given the preference in description. In one particular the book is open to criticism: when a drug is mentioned in connection with treatment, the dose is not given. In some instances this is a serious oversight. For example, in the treatment of aneurisms by means of the injection of gelatin, it is merely stated that the subcutaneous injection of a 1 per cent. solution of gelatin in normal salt solution is useful. Nothing is said as to the dose or as to whether the treatment is to be repeated. The chapter on anesthesia is brief but good. The chapters on surgical pathology are excellent, and the chapter on shock cannot fail to prove useful to both student and practitioner.

Atlas of External Diseases of the Eye. By. Dr. Richard Greeff, Professor of Ophthalmology in the University of Berlin and Chief of the Royal Ophthalmic Clinic in the Charité Hospital. Only Authorized English Translation by P. W. Shedd, M.D., New York. Half leather, with 54 plates and 84 figures in color. Pp. 135. Price, $10. New York: Rebman Co.

This is an almost literal translation from the text of Greeff's "Atlas der äusseren Augenkrankheit," and contains prints from the original plates illustrating that well-known work. While a careful comparison of the two atlases is not to the advantage of the American edition, either in type or paper, yet practitioners interested in external diseases of the ocular apparatus, but not familiar with German, will find in the English edition of Professor Greeff's works a most valuable aid in the diagnosis of those affections.

The German color-printer has faithfully portrayed the soft, almost indescribable, appearances of the diseased tissues—so difficult to present by any of the color schemes at our disposal. In this connection too much cannot be said commendatory of the remarkable fidelity with which the author, the sculptor (Herr Kolbow) and the optical firms (Mueller of Wiesbaden and Höning of Berlin) who supplied the artificial eyes for the models, and the printers have caught and fixed the pathologic alterations in such difficult subjects as eye patients. These illustrations, from the Berlin Pathoplastic Institute, are the best of their kind that have come to our notice.

By these means almost every ordinary and most of the rare diseases affecting the eyelids, the conjunctiva, the sclera, cornea, iris and lacrimal apparatus are portrayed, while many concurrent lesions on the face and head chiefly of dermatologic interest, are pictured.

A System of Medicine. By Many Writers. Edited by Sir Clifford Allbutt, K. C. B., M.A., M.D., LL.D., D.Sc., F.R.C.P., F.R.S., F.L.S., F.S.A., Regius Professor of Physic in the University of Cambridge, and Humphrey Davy Rolleston, M.A., M.D., F.R.C.P., Senior Physician, St. George's Hospital. Vol. VI. Diseases of the Heart and Blood-Vessels. Cloth. Pp. 844, with illustrations. Price, $1.50 net. New York: The Macmillan Co., 1909.

This volume is devoted entirely to a discussion of the diseases of the heart and blood-vessels. It contains nearly 850 pages, and the discussion of the subjects contained therein is full and complete. The first chapter, which is especially well worth reading, is devoted to a consideration of the physics of the circulation by Sherrington. It is a fitting introductory to the study of valvular lesions. Osler contributes a new article on Stokes-Adams disease. M'Crae has revised the original article by Dreschfeld on acute simple endocarditis. William H. Welch contributes the articles on thrombosis and embolism. There is little to criticize and much to commend in a work of this kind because it is complete. By no means the least of the valuable features of this book is the list of references appended to each article, although it is unfortunate that American medicine is mentioned so seldom.

The Practitioner's Visiting List for 1910. Flexible leather. Wallet-shaped, with flap, pocket, calendar for two years and valuable data. Price, $1.25. Philadelphia: Lea & Febiger.

This visiting list is especially adapted to the wants of the general practitioner; it is well bound, compact, and contains matter well selected to give the puzzled doctor the hint that he needs. Doses and therapeutic reminders are given of which the physician should ordinarily be independent, but which he may occasionally find useful.

Medicolegal

Principles of Constitutional Law Governing Health Regulations —Board Enjoined from Sending Elderly Woman with Anesthetic Leprosy to Pesthouse—Personal Liability of Members of Health Board

The Supreme Court of South Carolina says, in the case of Mary V. Kirk vs. Wyman and others, constituting the Board of Health of the City of Aiken (65 S. E. R. 387), that the principles of constitutional law governing health regulations by statute and municipal ordinance may be thus stated:

First. Statutes and ordinances requiring the removal or destruction of property or the isolation of infected persons, when necessary for the protection of the public health, do not violate the constitutional guaranty of the right of enjoyment of liberty and property, because neither the right to liberty nor the right of property extends to the use of liberty or property to the injury of others.

Second. The creation by legislative authority of boards of health, with the discretion lodged in them of summary inquiry and action, is a reasonable exercise of the police power and the rules and resolutions within the scope of the authority of such boards have the force of legislative enactment. Legislative power lodged by the Constitution exclusively in the General Assembly is not delegated to such boards, but they are merely the agency for carrying out the legislative enactment.

Third. Arbitrary power over persons and property could not be conferred on a board of health, and no attempt is made in the Constitution or statutes to confer such power. On the contrary, it is implied in all such legislation that the board shall exercise the police power conferred in view of the constitutional guaranty that no person shall be deprived of life, liberty or property without due process of law, or be denied the equal protection of the laws. It is always implied that the power conferred to interfere with these personal rights is limited by public necessity. From this it follows that boards of health may not deprive any person of his property or his liberty, unless the deprivation is made to appear, by due inquiry, to be reasonably necessary to the public health; and such inquiry must include notice to the person whose property or liberty is involved, and the opportunity to him to be heard, unless the emergency appears to be so great that such notice and hearing could be had only at the peril of the public safety.

Fourth. To the end that personal liberty and property may be protected against invasion not essential to the public health—not required by public necessity—the regulations and proceedings of boards of health are subject to judicial review, by an action for damages or for injunction or other appropriate proceeding, according to the circumstances. In passing on such regulations and proceedings, the courts consider, first, whether interference with personal liberty or property was reasonably necessary to the public health, and second, if the means used and the extent of interference were reasonably necessary for accomplishment of the purpose to be attained.

Fifth. In exercising the jurisdiction to review the regulations and actions of such boards by injunction or other proceeding, the courts cannot invade the province of the legislative branch of the government. Inasmuch as it is the province of the legislative branch to determine what laws and regulations are necessary to the public health, statutes and regulations made, and measures taken under such statutes, and intended and adopted to that end, are not subject to judicial review; but the courts must determine whether there is any real relation between the preservation of the public health and the legislative enactment, or the regulations and proceedings of boards of health under authority of the statute. If the statute or the regulations made or the proceedings taken under it are not reasonably appropriate to the end in view, the necessity for curtailment of individual liberty, which is essential to the validity of such statutes and regulations and proceedings, is wanting, and the courts must declare them invalid, as violative of constitutional right.

Sixth. In all judicial inquiry, with respect to health laws and regulations, every intendment is to be allowed in favor of the validity of the statute and the lawfulness of the measures taken under it.

In this case it was admitted that Miss Kirk, who was not only a lady of refinement, highly esteemed in the community, but who was quite advanced in years, was afflicted with anesthetic leprosy contracted while engaged in missionary work in Brazil. The evidence furnished of the opinions of both specialists and general practitioners of medicine was quite full, and led to the conclusion that there was hardly any danger of contagion from Miss Kirk, except by touch, or at least close personal association. What was more important than these opinions was the uncontroverted fact that she had for many years lived in the city of Aiken, attended church services, taught in the Sunday school, mingled freely with the people in social life, resting on the opinion of a distinguished London specialist that her disease was not contagious, and in all that time there had been nothing to indicate that she had imparted the disease to any other person.

But while there was a strong showing that the anesthetic form of the disease was only slightly contagious, the court considers that when the distressing nature of the malady was regarded, it was manifest that the board was well within its duty in requiring the victim of it to be isolated. However, it does not think that there was any necessity to send such a patient to the pesthouse, which in this instance was a structure of four small rooms in a row, with no piazzas, used previously for the isolation of negroes with smallpox, situated within a hundred yards of the place where the trash of the city, except its offensive offal, was collected and burned. Nothing but necessity would justify the board of health in requiring even temporary isolation in such a place for an elderly lady, enfeebled by disease, and accustomed to the comforts of life, and the court thinks there was a strong prima facie showing that there was no good reason to conclude that such necessity existed.

For these reasons the court affirms a decree granting a temporary injunction restraining the board of health from removing Miss Kirk to the city hospital for infectious diseases, or pesthouse, the order containing the condition that it was not to be understood as interfering with the board of health in maintaining such quarantine regulations as they might deem necessary for the public safety. Still the court wishes it understood that it cannot too strongly emphasize the caution which courts should exercise in entertaining applications for injunction against boards of health.

The court agrees, it says, with the circuit judge, also, on the point that an action for damages against the members of the board of health as individuals would not afford Miss Kirk an adequate remedy. In some jurisdictions it has been held that the members of a board of health incur personal liability for a mistake in destroying property on the ground that it is dangerous, when in fact it is not. But in South Carolina it must be held, on the authority of White vs. City of Charleston, 2 Hill, 576, that the members of a board of health are not personally liable for errors in their official conduct, when they exercise their honest judgment. Personal liability depends on proof of bad faith. True, bad faith may be shown by evidence that the official action was so arbitrary and unreasonable that it could not have been taken in good faith. But if there were such showing, the remedy by action for damages would not be adequate where the health or life of the citizen is by force unnecessarily imperiled. Protection from the loss of health or life is the only adequate relief in such a case.

"Partial" Versus "General" Insanity as a Defense to Crime

The Supreme Court of Kansas holds, in the homicide case of State vs. Moore (102 Pac. R. 475), that, if the trial court see fit, it may recognize monomania, or so-called "partial insanity," as distinguished from "general insanity," when instructing the jury in a criminal case involving that form of mental derangement as a defense; but it is not imperative that it should do so, and, if the proper tests of criminal responsibility for the act in question be stated in the instructions, the substantial rights of the defendant are sufficiently protected.

To destroy criminality, monomania, or so-called "partial," as distinguished from "general insanity," must dethrone the reason and judgment to the extent the law requires with reference to the act which is the subject of prosecution. The verdict must always be determined by the quality of that act. That act is the product of "insanity," as the law defines that term, or not. The person committing it is either sane or insane for all purposes of the verdict and judgment.

It is true that the law recognizes every form of insanity or delusion which renders an accused mentally incapable of knowing the nature and quality of the act done, and that it was wrong; but it is also true that the law recognizes no form of insanity, although the mental faculties may be disordered or deranged, which will furnish one immunity from punishment for an act declared by law to be criminal, so long as the person committing the act had the capacity to know what he was doing and the power to know that his act was wrong.

Therefore the form or species of insanity with which it is claimed a defendant was affected is not, in the last analysis, material, and need not be discriminated in the instructions; and, if the proper test of criminal responsibility for the act in question be given, the substantial rights of the defendant have been protected. In some cases it might be helpful, and in others it might be confusing, to the jury, for the court to open up the subject of the various forms in which mental derangement may be manifested. The refusal to do so can scarcely ever be erroneous, if otherwise full and proper instructions be given.

Current Medical Literature

Medical Record, New York

December 4

1 *Fundamental Functions of the Muscle-Cells of the Cardiovascular System, With Suggestion of a Classification of Arterial Disorders. L. F. Bishop, New York.
2 Early es of the Skull with Report of Kakels, New York.
3 Cance Jackson, Kansas City, Mo.
4 Opera Epididymitis. F. R. Hagner, Washington, D. C.
5 Urinary Protein Resembling Bence-Jones Albumose: Clinical History and Post-Mortem Findings. J. E. Dale, Fort Collins, Colo.

1. **Functions of Muscle Cells of Cardiovascular System.**—Bishop says that cardiac muscle cells have retained some of the properties of nerve fibers. They have five sorts of properties, stimulus production, excitability, conductivity, contractility and tonicity. If supplied with appropriate nutriment the heart-muscle cells possess a power to secrete internally a material capable of causing contraction. This is stored up, and is exhausted by the beat. A specialization of function is necessary for the coordination of the heart action. Rest and proper nourishment are essential factors in heart treatment. The classification of arteriosclerosis is founded on the tonicity of the median coat. Hypertrophy of the media is the principal factor in many cases of atheroma and arteriosclerosis. Hypertonicity leads to sclerosis and hypertrophy of the media, and atheroma is apt to be engrafted on the diseased artery.

Boston Medical and Surgical Journal

November 25

6 *Diagnosis of Ulcer of the Duodenum. E. A. Codman, Boston.
7 Points in the Diagnosis of Injuries. F. J. Cotton, Boston.
8 *Variations in the Posterior Horn of the Lateral Ventricle. E. J. Curran, Boston.
9 Chemical Examination of the Feces of Infants and Children After Gastroenterostomy. F. B. Talbot, Boston.

December 2

10 *One Hundred Cesarean Sections Performed in the Boston Lying-In Hospital. C. M. Green, F. S. Newell, L. V. Friedman, N. R. Mason, J. R. Torbert and R. L. de Normandie, Boston.
11 Diagnosis of Ulcer of the Duodenum (continued). E. A. Codman, Boston.
12 Interstitial Pregnancy. F. W. Johnson, Boston.

6. Abstracted in THE JOURNAL, July 17, 1909, p. 226.

8. **Variations in Posterior Horn of Lateral Ventricle.**—Out of 64 adult brains, not specially chosen, examined by Curran, all

grades of variation were encountered, from the dilated ventricle of hydrocephalus internus to complete occlusions of the posterior horns, and these were numerous. In a large percentage of brains the tip of the posterior horn of the lateral ventricle is cut off from communication with the rest of the ventricle by a constriction and adhesions about the calcar avis. In many cases the adhesion of the walls is complete throughout the occipital lobe, making the so-called short horn. The ependyma, however, remains on the two adherent walls and can always be seen in this position, proving that this part at one time during development was occupied by the cavity which has since become obliterated. In many cases the tip of the posterior horn has a very narrow communication with the rest of the lateral ventricle, and, on account of the thinness of the wall about the calcar avis, any change in pressure is likely to close this aqueduct and produce a temporary disturbance in the circulation of cerebrospinal fluid, and might give rise to pain or other symptoms. Any of the above conditions would obstruct the circulation of cerebrospinal fluid. When the posterior horn is entirely or partially closed by adhesion of the walls, any increase of internal pressure would tend to break the adhesions and reestablish the normal posterior horn. Might not such straining on the adhesions, asks Curran, *give rise to pain or other symptoms?*

That the calcarine fissure and the cerebellum, which modify so much the shape of the posterior horn, are developing rapidly about the time of the appearance of convulsions in infants is an interesting coincidence. The large proportion of anomalies in the posterior horns of brains from institutions is significant. In all cases the ventricle should extend far into the occipital lobe, and traces of its having been there at one time during development are always to be found. The relationship of the optic radiation and other structures to the posterior horn are important facts for consideration in connection with the causes of temporary scotoma and migraine, and possibly other conditions. The condition of the posterior horn should be examined in all cases of obscure cerebral diseases or mental disorders.

10. **Cesarean Section.**—In general, the results in this series of 100 cases were as follows: Eight patients died, a mortality of 8 per cent. There were 43 primary operations in the series. One mother died, and one baby was lost. The cause of the maternal death was general peritonitis, probably due to some slip in the operative technic. One child died a few minutes after delivery after breathing well; the cause of death was congenital heart disease. One patient ran a moderate febrile temperature for the first few weeks after operation, but recovered without pelvic or other symptoms. In other words, among the primary operations there was one maternal and one fetal death, 2.3 per cent., and one patient who had an abnormal convalescence. Twenty-six cases were included in the secondary class. One mother died, on the eighth day following operation, of pyemia. At the time of operation it was known that she was a poor risk, as she was suffering from chronic nephritis, but the condition which demanded operation was an extreme degree of vaginal atresia following an old laceration, so that abdominal delivery was imperative. Two children died following delivery. One small, poorly developed child, the mother being a rachitic dwarf, died four hours after delivery, and the other died on the seventeenth day following delivery, of inanition.

The complications following operation were distinctly more marked in the secondary cases than in the primary. Three women suffered from phlebitis of one or both legs. One patient ran a febrile convalescence, but eventually recovered completely. In 3 cases the abdominal wound broke down and the convalescence was necessarily prolonged. In the secondary cases, then, we find a maternal mortality of approximately 4 per cent., and a fetal mortality of 8 per cent., while the complications which appeared during the convalescence were much more prominent than in the primary operation. In the late cases there were 31 operations. Among these there were 6 maternal deaths, approximately 19 per cent. The cause of death in all cases except one was general peritonitis. Five babies were lost, either being dead before operation was begun or dying shortly after delivery. Of the 6 mothers who died, 3 had been in labor twenty-four hours or more. In one, high forceps had been tried and failed. One patient was suffering from acute nephritis as a complication, and in one a sponge was left in the abdomen at the time of operation.

New York Medical Journal

December 4

13 *Influence of Diet on Infantile Mortality.* J. P. C. Griffith, Philadelphia.
14 *Immunizing Treatment of Hay Fever. W. Scheppegrell, New Orleans.
15 Resection of Five Feet of Intestine Following Thrombosis of the Mesentery. G. E. Shoemaker, Philadelphia.
16 Typhoid From the Surgical Point of View. A. E. Isaacs, New York.
17 *Amebic Enteritis with Uncinaria, Trichocephalus, and Trichomonads: Results of Treatment after Four Years. J. G. Gage, Ann Arbor, Mich.
18 Carcinoma in Early Life. H. T. Karsner, Philadelphia.
19 Fracture-Dislocation of the Spine. H. S. MacLean, Richmond, Va.
20 Management of a Cholera Campaign in the Philippines. A. J. McLaughlin, U. S. P. H. and M.-H. S.
21 *A New Artificial Leech. A. M. MacWhinnie, Seattle, Wash.

14. **Treatment of Hay Fever.**—In about 80 cases which Scheppegrell has observed, ragweed was the causal factor in every case except one, which was undoubtedly due to the goldenrod. The pollen of the ragweed is not simply a mechanical irritant, like dust, as is usually supposed, but it contains a pungent aromatic compound which acts as an irritant on the nasal mucosa. As a scientific basis for the prevention of hay fever, one must either cause the entire disappearance of the plant which produces the causative factor of the disease, or must artificially develop in patients susceptible to it that degree of tolerance which naturally exists in persons not suffering from hay fever. The former is neither possible nor practicable. The alternative, therefore, is the development of an artificial tolerance to the irritating pollen in persons subject to hay fever. Such a tolerance is gradually developed in the progress of the disease.

As the staminate flowers of the ragweed contain its pollen, these are made use of by Scheppegrell. At a period of time varying from two to six weeks the pollen of the staminate flowers are inhaled by the patient. These inhalations are at first made two or three times a day, and later, as the time of the usual development of the disease approaches, more frequently. The inhalation is followed by a slight attack of sneezing, some lachrymation, and a watery discharge from the nose, and then a congestion of the mucous membrane of the nostril. As no inflammation exists, these effects are not disagreeable or painful, and ordinarily pass off in the course of an hour. If the patient takes a walk or other form of exercise immediately after the application is made, the congestion of the mucous membrane is less marked. In a few days, the applications produce less reaction, and more pollen may be inhaled and the inhalations made a greater number of times. Gradually the reactions become less and finally are not observed by the patient. When this is the case the patient is immune to an attack of hay fever at this time.

This immunity, Scheppegrell finds, is not permanent, and therefore the treatment should not be discontinued until the regular advent of the hay-fever season, when it should be entirely discontinued, as the natural pollen of the air takes the place of the artificial inhalations. Scheppegrell believes that if the staminate inhalations are resumed after the cessation of the hay-fever period, a permanent tolerance will gradually be developed which will give the patient permanent immunity.

17. **Amebic Enteritis.**—The case reported by Gage was one of amebic dysentery of about two years' standing, and could not be considered a very promising one for treatment. The results show, however, that in some chronic cases the patients can be permanently cured by medical treatment, and they also illustrate the value of the ipecac treatment. The cure in this case is permanent, as shown by the freedom from symptoms in four years and the results of examinations of the stools. The character of the stools shows some intestinal indigestion, which may be the result of the former dysentery. The uncinariasis was very mild. There were only eight worms in the intestine, there was no distinct anemia, the eosinophilia was not marked, and there were no symptoms of the disease. The thymol treatment was successful in getting rid of all the worms. The trichomonads were evidently not greatly affected

by the thymol. They were present in the stools afterward, but apparently not as numerous. They were not present in the stools after the ipecac was given. The trichocephalus eggs were found on only one occasion and then only four. No worms were seen in the stools.

21. **New Artificial Leech.**—MacWhinnie uses a sterile artificial leech made of glass, which is so shaped as to show the exact amount of blood being extracted, and can be used at any particular point that is desired. It has three openings, the larger being for abstraction on the temple, while the smaller one on the same plane is made for attachment either with a large rubber bulb, or direct connection with a Pynchon pump. The large end has a diameter of 1¼ inches, and is adapted for the temple, cheek, or, in fact, any part of the face. The two small openings are arranged for the tragus, while the larger one may be used for the mastoid as well. When the surfaces are irregular the small opening is desired. Being of glass it can be sterilized, and its size is convenient. At the lower end of the bulb a cork is inserted which is removed when the proper amount of blood is obtained, and the whole instrument is then sterilized. No guess is needed as to whether the blood is being withdrawn or not, or in what amount. The artificial leech is first applied for several minutes to create a congestion, which will raise the part from 2 to 5 millimeters. Several small punctures are then made, preferably with a cataract knife. The artificial leech is then applied as described.

Lancet-Clinic, Cincinnati

November 27

22 *Burn which Involved One-half the Body Area; Recovery. A. H. Barkley, Lexington, Ky.
23 The Submerged Tonsil. W. Mithoefer, Cincinnati.
24 Abuse of the Obstetrical Forceps. J. O. Jenkins, Newport, Ky.

22. Abstracted in The Journal, Nov. 20, 1909, p. 1709.

Kentucky Medical Journal, Bowling Green

November 1

25 *Medical Organization and Work. I. A. Shirley, Winchester.
26 *Plea for the Surgery of Our Small Hospitals. J. L. Phythian, Newport.
27 *Prophylaxis in Medicine. C. G. Stephenson, Becknersville.
28 *Surgical Treatment of Cancer. A. J. Ochsner, Chicago.
29 Plea for the Protection of the Unborn Child in Kentucky. T. C. Holloway, Lexington.

November 15

30 Etiology, Pathology, and Symptomatology of Diabetes Mellitus. J. S. Lutz, Louisville.
31 Treatment of Diabetes Mellitus. J. B. Lukins, Louisville.
32 Control of Tuberculosis in Children. B. C. Frazier, Louisville.

25, 27, 28. Abstracted in The Journal, Nov. 27, 1909, pp. 1851, 1852, 1853.

26. Abstracted in The Journal, Nov. 13, 1909, p. 1651.

Journal of Experimental Medicine, Lancaster, Pa.

November

33 *Resistance to a Specific Hemolysin of Human Erythrocytes in Health and Disease. P. Rous, Baltimore.
34 Mechanism of the Reaction Between Bile Salts and Blood Serum and the Effect of Conjugation in the Formation of Bile Salts. A. W. Sellards, Baltimore.
35 *Influence of Thyroidectomy on Alimentary Glycosuria. J. McCurdy, Baltimore.
36 *Therapeutic Immunity Reaction in Differentiation of Trypanosome Species. B. T. Terry, New York.
37 *Parabiosis as a Test for Circulating Antibodies in Cancer. P. Rous, Baltimore.
38 *Phagocytic Immunity in Streptococcus Infections. J. C. Meakins, New York.
39 *Character of Protein Metabolism in Chronic Nephritis. P. A. Levene, L. Kristeller and D. Manson.

33. **Specific Hemolysin of Human Erythrocytes.**—Disease appears to change the resistance of red cells to specific hemolysin only in special cases. Of 41 cases of secondary anemia, 1 only showed a decrease. In 2 of 3 cases of pernicious anemia and in 2 cases of leucemia resistance was decreased also, and a decrease occurs sometimes in obstructive jaundice. An increase in resistance was seen in 2 cases of hemophilia and in 1 of chronic parenchymatous nephritis and in 1 of congenital icterus (Minkowski). The resistance of human corpuscles to hypotonic salt solution and to specific hemolysin are entirely independent of each other and the resistance to salt solution is much the more variable.

35. **Influence of Thyroidectomy on Alimentary Glycosuria.**—Removal of the thyroid glands causes a rise in the assimilation limit for dextrose, and if the parathyroids are left this result is permanent. The thyroids probably inhibit normally the direct combustion of the sugar in the muscles.

36. **Differentiation of Trypanosome Species.**—The experiments show that the guinea-pig is an unfavorable animal in which to preserve trypanosomes if the therapeutic immunity reaction is to be employed in the differentiation of trypanosome species, because trypanosomes of common origin which had not come in contact with medicaments of any sort behave like different species after having been passed through guinea-pigs for twelve months.

37. **Test for Circulating Antibodies in Cancer.**—The growth of adenocarcinoma in white rats was unaffected when the tumor animal was joined experimentally (parabiosis) with a resistant animal,

38. **Streptococcus Infections.**—In certain streptococcus infections, such as acute endocarditis and tonsillitis, there may be considerable increase in the opsonin for the streptococcus causing the infection and little or no increase for streptococci from other sources. Hence it is argued that but little benefit may be expected from the inoculation with bacteria killed by heat unless with streptococci causing the infection.

39. **Protein Metabolism in Chronic Nephritis.**—Results indicate that it may be important for dietetic-therapeutic purposes to establish the eliminating efficiency of the kidneys for nitrogenous substances.

Medical Herald, St. Joseph, Mo.

November

40 *Cancer a Constitutional Disease: Its Rational Treatment. J. E. Summers, Omaha, Neb.
41 Diseases of Metabolism as a Group. A. C. Croftan, Chicago.
42 Management of Enlarged Spleens. T. E. Potter, St. Joseph.

40. Abstracted in The Journal, Sept. 25, 1909, p. 1049.

Archives of Pediatrics, New York

November

43 Finkelstein's View of Infantile Alimentary Intoxication. I. M. Snow, Buffalo.
44 *Relation of Exercise to Adolescent Heart Development. W. L. Foster, Brooklyn.
45 Congenital Cyst of Liver. H. L. K. Shaw and A. W. Elting, Albany, N. Y.
46 Embryonal Adenosarcoma of the Kidney. M. Wollstein, New York.
47 *Investigations on the Irritating Effects of Cathartic Drugs. I. A. Abt, Chicago.
48 Cerebral Hemorrhage (Birth) with Operation. F. S. Meara and A. S. Taylor, New York.

44. **Exercise and Adolescent Heart Development.**—Foster claims that vigorous exercise is necessary for the boy at puberty to secure the normal heart development. During the training of athletics and in contests allowance should be made for the fact that the lesser muscular development of the prepubescent heart makes it unfit for prolonged violent exercise. Hearts of all school boys should be examined and suitable regulation of exercise suggested when necessary. No boys with heart murmurs should be allowed to indulge in the physical training work involving decidedly increased heart action or to enter any athletic contests.

47. Abstracted in The Journal, July 10, 1909, p. 140.

Yale Medical Journal, New Haven, Conn.

November

49 *Medical Aspect of Gastric Insufficiency. H. F. Stoll, Hartford, Conn.
50 Typhoid Spine. P. P. Swett, Hartford, Conn.
51 Cystoscopy: Its Technic and Diagnostic Uses. P. D. Littlejohn, New Haven.
52 *Dermatitis Following Local Application of Cow's Milk. H. M. Steele, New Haven.
53 *Ocular Evidences of Systemic Disease. M. H. Gill, Hartford, Conn.
54 *Partial Responsibility of the Insane. F. T. Simpson, Hartford, Conn.
55 *Hemolysis in Diagnosis of Malignant Neoplasms. H. S. Arnold, New Haven.

49. **Medical Aspect of Gastric Insufficiency.**—Stoll has found the following regimen to be satisfactory in these cases: Massage along the course of the colon before rising each morning; a glass of cold water before dressing; eat liberally of vegetables and fruits, especially stewed prunes and figs; drink two glasses of water between meals, and most important of all, have a regular time for going to stool whether the inclination is

present or not. The crouching position, as when a chamber is used, is sometimes of advantage, and colonic massage at that time is very efficacious. The food should be of a kind which leaves considerable residue in the intestine. Sour milk, buttermilk or cider may be drunk between meals and at bedtime. Agar-agar in amounts of from one-half to one ounce daily is effectual. Bran in place of breakfast food may be used, and a small amount of olive oil taken at meal times will very often be all that is required to insure a daily stool. Olive-oil injections given just before retiring are the most satisfactory means of obtaining a cure in very chronic cases; given at first every night; later, every other night, and so gradually make the interval longer until they are no longer required. With very weak abdominal muscles, exercises and electricity *are indicated.*

52. **Dermatitis Following Local Application of Cow's Milk.**—The rash in Steele's case occurred with perfect regularity, coming out about fifteen minutes after the milk touched the skin, lasting at first an hour, then gradually existing a shorter and shorter time until after twenty-one days it ceased to appear. In appearance it was a bright red blush, not raised, at times sharply circumscribed, at others with fading pink edges to normal skin. In extent it conformed quite closely to the area touched by the milk, either by running over the chin or cheek from the mouth or on the area to which milk was purposely applied. At no time did it resemble urticaria or cause apparent itching. With the exception of being a deeper red, it exactly imitated areas of skin often noted in babies where, for instance, the inner aspects of the knees have been pressed together for some considerable time during sleep, which on separation show a transient blush, lasting perhaps longer than the same condition in adults and being more brilliant in color.

53, 54, 55. Abstracted in THE JOURNAL, June 25, 1909, p. 2125.

Atlanta Journal-Record of Medicine

November

56 Etiology of Pellagra. R. T. Dorsey, Atlanta, Ga.
57 The Plea of Insanity and Some Pointed Tests. J. C. King, Atlanta.
58 Flatfoot and its Treatment. T. Toepel, Atlanta.
59 [illegible] gra. E. C. Thrash, Atlanta.
60 [illegible] of Pellagra, Leprosy and Tertiary [illegible] College Park, Ga.
61 [illegible] Evil. A. W. Stirling, Atlanta.
62 Use of Fats in Tuberculosis. L. C. Roughlin, Atlanta.
63 Alveolar Pyorrhea and its Relation to Other Diseases. R. R. Adair, Atlanta.

Archives of Ophthalmology, New York

November

64 Extraction of Cataract in the Capsule. A. E. J. Lister, London, England.
65 Concretion in the Lower Canaliculus without Characteristic Signs; Concretion in the Upper Canaliculus. G. S. Derby, Boston.
66 Congenital Fistula of the Lachrymal Canaliculi. M. Carvill, Somerville, Mass.
67 Subconjunctival Cysticercus Cellulosæ. A. N. Alling, New Haven, Conn.
68 Hemorrhagic Central Chorioretinitis in Non-Myopic Eyes. C. J. Kipp, Newark, N. J.
69 *Differentiation of the Diphtheria Bacillus from Organisms Morphologically Similar. C. Fisher, [illegible]
70 Improved Apparatus for Localizing [illegible] Eyeball by the Roentgen Rays. W. [illegible]
71 Significance and Treatment of Traumatic Prolapse of the Iris. E. Gruening, New York.

69. **Differentiation of Diphtheria Bacillus.**—As the result of much experimental work, Fisher concludes that the diphtheria bacillus cannot be identified accurately by its morphology and its cultural characters alone. True diphtheria bacilli always ferment dextrin within forty-eight hours and never saccharose. This reaction, however, is not distinctive of the virulent bacillus diphtheria, since it is also given by certain non-pathogenic organisms, having the same morphology. Out of 13 unselected races which fermented dextrin, 5 were totally avirulent. Since bacilli which fail to ferment dextrin are much more commonly encountered, the fermentation test would, in the majority of cases, be conclusive. Practically, it is of little value on account of the necessity of obtaining the bacilli in absolutely pure culture. Animal inoculation is, at present, therefore, the only reliable practicable method of identifying the diphtheria bacillus. To exclude the virulent diphtheroids, a guinea-pig immunized with diphtheria antitoxin must be inoculated also.

Western Medical Review, Omaha

November

72 Army Sanitary Administration in the United States and Tropics. J. M. Banister, U. S. Army.
73 Senile Dementia. F. H. Kuegle, West Point, Neb.
74 Therapy of Rheumatism. L. Crummer, Omaha, Neb.
75 Hemorrhoids. S. W. Phifer, Wheatland, Wyo.

Journal of Infectious Diseases, Chicago

November

76 *Fecal Bacteria of Healthy Men. W. J. MacNeal, L. L. Latzer and J. E. Kerr, Urbana, Ill.
77 *Proportion of Granular and Barred Forms of *Bacillus Diphtheriæ* in Throat Cultures. O. T. Schultz, Cleveland, Ohio.
78 Bleeding to Death to Obtain Maximum Amount of Antidiphtheritic Serum from Horses. P. G. Heinemann and A. C. Hicks, Chicago.
79 *Use of Anhydrous Sodium Sulphite in the Preparation of Endo's Medium. J. H. Kastle and E. Elvove, Washington.
80 Experiments on Vaccination Against Rat Leprosy: Extraction of Rat Lepra Bacilli from Watery Emulsions by Chloroform. W. B. Wherry, Oakland, Cal.
81 Effect on Mice of Minute Doses of *B. Anthracis*. M. A. Barber, Kansas City, Kan.
82 *Effect of Reaction and of Certain Salts on Normal Opsonins. H. E. Eggers, Chicago.
83 Subacute Plague in Man Due to Ground Squirrel Infection. G. W. McCoy and W. B. Wherry, U. S. P. H. and M.-H. S.
84 *Pathology and Bacteriology of Plague in Squirrels. G. W. McCoy, U. S. P. H. and M.-H. S.
85 *Resistance of Human Erythrocytes to Cobra Venom. R. Weil, New York.

76. **Fecal Bacteria of Healthy Men.**—The number of fecal bacteria that grow on artificial media is only a small fraction of the bacteria microscopically visible in feces. In addition to the colon bacillus group, sporogenic aerobic bacilli and sporogenic anaerobic bacilli are normally present in human feces. *B. welchii* is normally present in the feces. It is to be noted, however, that the total number of sporogenic bacilli is much greater than indicated by the cultures, and there are a number of bacterial species in normal feces not yet cultivated.

77. **Bacillus Diphtheriæ in Throat Cultures.**—Granular forms of diphtheria bacillus in throat cultures appear to be increasing in frequency in Cleveland, whereas the barred forms have almost disappeared. The presence of these granular forms renders the distinction between genuine diphtheria bacillus and a granular non-pathogenic bacillus more difficult.

79. **Anhydrous Sodium Sulphite in Endo's Medium.**—Wherry was unable to arrest the progress of inoculation leprosy in a white rat by means of injections of rat lepra bacilli killed by heat. Injections of killed bacilli some days previous to the injection of living bacilli resulted in marked delay in the progress of the disease.

Leprosy tissue from a rat on being ground up with powdered glass and extracted with salt solution and then shaken up with commercial chloroform, the chloroform then being evaporated, gives a residue containing millions of bacilli free from all cellular elements and other bacteria. The method might be of assistance in detecting lepra bacilli in human cases.

82. **Effect of Salts on Normal Opsonins.**—The maximum opsonification occurs at the normal (alkaline) reaction of the serum, and any change of this reaction in either direction diminishes the opsonic effect. This result of altered reaction is due in large measure to its effect on the thermolabile element of the opsonin. Magnesium chlorid appears to stimulate phagocytic action of leucocytes.

83. **Subacute Plague in Man.**—The first case of undoubted squirrel plague in man which has come to autopsy in America is reported. The lesions were similar to those of subacute plague in guinea-pigs, rats and squirrels. The authors have not seen any lesions like those observed in this case—lobular pneumonia and multiple abscesses of the lymph nodes, lungs, liver and kidneys—in any other case of human plague.

84. **Plague in Squirrels.**—The commonest lesion of plague in the ground squirrel is a bubo and this may be the only one. There may be also purulent foci in the spleen, the liver, the lung and the kidney. Smears from purulent material fail to show pest bacilli in the majority of cases. The diagnosis was made by inoculation.

85. **Resistance of Human Erythrocytes.**—Weil has tested the resistance of human red corpuscles to a number of hemolytic agents, and of these agents cobra venom has given results of special interest. The condition which presents the most marked degree of resistance is syphilis after it has passed the

primary stage. Normal individuals and various diseased conditions give variable resistance within certain narrow limits, but this does not approach the degree of resistance characteristic of syphilis. The practical application of the reaction remains to be worked out. Theoretically, it is interesting because it illustrates a definite alteration in cells in response to an infection.

Journal Tennessee State Medical Association, Nashville

November

86 [illegible] Prostatic and Membranous Urethra of [illegible]y. W. D. Sumpter, Nashville.
87 [illegible]ounty. N. F. Raines, Raines.
88 [illegible] J. T. Moore, Algood.
89 Diagnosis and Treatment of Eczema. J. M. King, Nashville.
90 The Neuroses. J. Lanski, Chattanooga.
91 Early Diagnosis of Gall-Stone Disease. J. E. Cannaday, Charleston, W. Va.

Journal of Cutaneous Diseases, New York

November

92 *Etiology of Psoriasis. S. Pollitzer, New York.
93 *The Parasitism of Psoriasis. J. F. Schamberg, Philadelphia.
94 *Idiopathic Multiple Hemorrhagic Sarcoma (Kaposi): Trauma an Etiologic Factor (?). D. Lieberthal, Chicago.

92. **Etiology of Psoriasis.**—According to Pollitzer, rheumatism, gout, neurosis and heredity are not direct etiologic factors in the production of psoriasis, but in the present state of our knowledge it can neither be denied nor affirmed that they may have some bearing on the obscure conditions of the system which render it more or less susceptible to this especial infection. Psoriasis is one member of a group of parakeratoses to which seborrhea corpis, and, in part, eczema seborrhœicum, belong, and is most probably due to an external microbic infectious agent.

93. **Parasitism of P[illegible]** [illegible]ys that it might be argued that the [illegible] psoriasis in the vast majority of subjects,operates against the assumption that psoriasis is a local parasitic disease due to an exogenous organism. It might, furthermore, be argued that if the lesions of psoriasis are due to the implantation of a parasite on the skin of a susceptible individual, inoculation with lymph, blood and scales from a diseased patch on the healthy skin in the same patient might be reasonably expected to reproduce psoriasis lesions. Lack of knowledge, however, concerning possible conditions of immunity in this connection, makes it unwarranted to deduce any positive conclusions of the character indicated. The inability to autoinoculate psoriasis patients would not at all affect the hypothesis that psoriasis is a constitutional, infectious disease. From what has been stated, it is obvious that no definite conclusion as to the parasitism of psoriasis is warranted. The mode of growth and configuration of the patches, the occasional instances of apparent communication of the disease, and the Destot inoculation are arguments in favor of parasitism which cannot be decisively brushed aside. On the other hand, the general behavior of the disease, the common experience of observers as to absence of contagion and the almost uniform failure of inoculation experiments constitute strong evidence against parasitism.

94. **Multiple Hemorrhagic Sarcoma.**—This is the fourth case of this disease reported by Lieberthal. The three previous cases were reported in THE JOURNAL, Dec. 6, 1902, and Oct. 10, 1908.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

November 20

1 Greek Medicine in Rome. T. C. Allbutt.
2 *Relation Between the Time of Rupture of the Fetal Membranes and Lacerations of the Cervix Uteri. S. Colyer.
3 A Short Criticism of the So-called Rational Puerperium. H. T. Hicks.
4 *The Blood-Tight Uterus and Its Influence on Involution. C. N. Longridge.
5 Lymphangioplasty for Solid Edema. A. B. Mitchell.
6 Intestinal Obstruction from Traumatic Rupture of Blood-Vessel. R. Stewart.
7 Early Recognition and Treatment of Acute Intestinal Obstruction. J. Hartley.
8 *A Method of Intestinal Drainage. M. Mamourian.
9 Severe Eclampsia in Early Pregnancy: Recovery. A. S. Campbell.

2. **Laceration of Cervix Uteri.**—Colyer states that when the first stage of labor is normal, the presenting part descends into a dilated cervix by which it is not tightly grasped, and hence no lacerations are likely to ensue. But should it so happen that the membranes rupture before the end of the first stage, then the presenting part will descend into an incompletely dilated cervix by which it will be lightly grasped. In the latter case, second-stage pains will ensue, and the uterus will transmit a force to the presenting part, which will stretch the cervix at a rate in excess of its physiologic yielding power, and, as a rule, beyond its momentarily elastic limit, and thus lead to its laceration. The nearer the os approaches to full dilatation the greater will be the force exerted on it by the presenting part, because not only does the angle between the two become increasingly acute, but the pains will be stronger. It is not uncommon when the membranes rupture late to find that the presenting part is driven through an incompletely dilated cervix in one or two pains, thus proving how rapidly the stretching may take place. In those cases in which the membranes rupture early, we should not find lacerations of the cervix so common, for in them, as a rule, labor is slow until the cervix is sufficiently dilated to allow the presenting part to enter, and when it does enter the pains gradually change in character from those of the first stage to those of the second. In the second stage contraction and retraction of the longitudinal fibers become marked, and thus tend to draw up the cervix and lead to a more rapid dilatation of the os. But even with these compensations a slight rupture appears to occur in most cases.

4. **Blood-Tight Uterus and Involution.**—Physiologically, Longridge says, involution of the uterus may be considered as an acute autolytic degradation of the muscular tissue. It takes place in two stages, a rapid and a slow stage. The rapid stage differs from the slow, in that in the former the uterus is practically anemic and the reaction of the tissue is acid, whereas in the slow stage the reaction is alkaline and the blood is slowly percolating through the vessel walls. The transition from one stage to another is marked by an increased excretion of nitrogen.

8. **Intestinal Drainage.**—The method employed by Mamourian consists in utilizing the Murphy button with a piece of soft rubber tubing (about a yard or more long) as follows: A purse-string suture of silk is passed round one of the ends of the rubber tube, the male or female half of the button is introduced into the lumen and the thread tightened so as to grip the neck of the button. Next, a segment of the distended bowel is clamped and a linear purse-string suture inserted. The gut is incised, the other half of the button placed in position, and finally the two sections of the instrument united in the usual way. The anastomosis between bowel and rubber tube is complete, and on removing the clamp there is no leakage, and the fecal contents pass out of the tube into a jar containing some kind of deodorant well away from the area of operation. The purse string on the bowel need only be secured by a temporary knot so that the suture may be tightened and the incision instantaneously closed after the withdrawal of the button, the bowel being reclamped before the button is removed. If one opening does not give satisfactory drainage, the process can be repeated with as many coils as the surgeon desires, or a piece of drainage tubing can be passed up the soft tube through the button into the bowel and the intestines "milked" without the hands coming into contact with fecal matter.

This method is, perhaps, more serviceable in cases which require immediate colotomy. The Murphy button, this author considers, is superior to Paul's tubes, as its use involves no danger of detachment or leakage. The soft tube, with half the button in position being ready, the operation can be completed in a few minutes. The button, as a rule, remains *in situ*, affording good drainage for at least four days, during which time there is no necessity even to inspect the wound. When the button comes away the peritoneal cavity is completely shut off and the wound partially healed. The artificial anus thus made leaves nothing to be desired.

Lancet, London

November 20

10 Malaria in India. J. T. W. Leslie.
11 *Myotonia Atrophica. F. E. Batten.
12 Intestinal Obstruction in Which Double Resection of Intestine was Performed. H. M. Rigby.
13 *Streptococcal Infection in Eighty Consecutive Cases of Diphtheria. D. M. Mathieson.
14 Case of Thoracostomy for Heart Disease. A. Morison.
15 Kala-Azar in Madras, Especially its Connection with the Dog and the Bug (Conorrhinus). C. Donovan.
16 Acute Torsion of the Splenic Pedicle, Recovery after Splenectomy: Case of Floating Liver Cured by Operation. P. Patterson.

11. **Myotonia Atrophica.**—The leading features of this disease are summarized by Batten as follows: A patient, usually a male, between the twentieth and thirtieth year of life, begins to complain of weakness of the limbs and wasting of muscles. Some stiffness of muscles may also be complained of. On examination he is found to have weakness, and atrophy of the facial muscles, of the sternomastoids, of the flexors and extensors of the wrist, of the extensors of the leg or dorsiflexors of the foot, and the striking myotonic phenomenon that after grasping an object he has difficulty in relaxing his grasp. Pathologically, there is a general cirrhotic condition of the muscles, such as is found in muscular dystrophy. The spinal cord may show some degeneration in the posterior column, but the other portions of the nervous system are normal.

13. **Streptococcal Infection in Diphtheria.**—Mathieson records observations made in 80 consecutive cases of diphtheria admitted to the Infectious Disease Hospital, Leith. A bacteriologic examination of the throat of each patient was made on admission and at intervals during the stay in hospital, and the clinical progress was recorded. In 9 out of 80 cases a marked streptococcal infection of the throat was found at one time or other in the course of the disease. Out of these 9, 5 developed symptoms corresponding to those described by Sevester and Martin about the thirteenth day. In the remaining 71 patients in whom no streptococcal infection of the throat was at any time found, 2 showed epiphenomena about the thirteenth day. In other words: (a) 55 per cent. of the streptococcal cases developed "thirteenth-day" symptoms; and (b) 2.8 per cent. of the non-streptococcal cases developed these symptoms.

The following is a brief summary of the 7 cases in which "thirteenth-day" phenomena were observed: (a) Streptococcal cases: (1) punctate erythema + albuminuria; (2) sore throat + joint pains + rise in temperature (100.8 F.); (3) otorrhea; (4) punctate erythema; and (5) punctate erythema + rise of temperature (99.4 F.); (b) Non-streptococcal cases: (1) erythema multiforme; and (2) punctate erythema + rise of temperature (99.8 F.).

Medical Press and Circular, London

September 22

17 Decalcified Dietary in Arterial Atheroma. M. Loeper and X. Gouraud.
18 Adoption of Notification of Tuberculosis by Local Authorities. G. C. Trotter.
19 *How to Deal with the Quack Medicine Traffic. J. C. McWalter.
20 The Relation of Health to Industry. B. A. Whitelegge.

19. **Quack Medicine Traffic.**—According to McWalter, the solution of the quack medicine problem is simply this—that makers of the nostrums should be required to set forth the ingredients on the label. He says: This is practically the American remedy, but, after all, the problem in the United States has been very much like the problem with us; the results appear to be satisfactory, and we should not be too proud to follow a good example from a kindred people. Assuming that the disclosure of the ingredients is the remedy for the quack medicine trouble, how can we insist on it? An act of Parliament at once suggests itself, and would be the procedure if we had a minister of public health; but we have no such minister, and the difficulty of procuring such a bill might be insuperable. All the power and influence of our association has not been able to bring the new medical act into being, and if we cannot suppress open unqualified practice of medicine by law, we can scarcely hope to interfere with an insidious form of the evil which brings the treasury in 340,000 pounds a year. The indications for the treatment of the quack-medicine trouble are, then, to get statutory powers to insist that the ingredients be set forth on the label—and pending legislation to that effect to have the various medical officers of health to deal with the makers under the food and drugs act, with the help of the analytical records of the British Medical Association. The association might well help the campaign by other means—namely, by furnishing chemists with printed results of the analysis of the nostrums on which most of the public money is being spent at the moment. These should be sent out under the authority of the association, otherwise they would surely be questioned by the quacks. In addition to chemists, this might also be distributed to all doctors in the country, whether members of the association or not, as well as to the public analysts, sanitary authorities and the clergy.

Clinical Journal, London

November 3

21 Prognosis in Inflammatory Diseases of the Lungs and Pleura Commonly Treated Surgically. R. J. Godlee.
22 Retention of Menses. H. R. Andrews.

Practitioner, London

November

23 *Treatment of Inoperable Sarcoma by Bacterial Mixed Toxins. W. B. Coley.
24 Current Theories Regarding Arteriosclerosis: Symptoms. J. Cowan.
25 [illegible] Arteriosclerosis. A. T. Ballantyne.
26 * in Children. J. W. Carr.
27 Bishop.
28 Indications for Operation in Tuberculosis of the Kidney. J. W. T. Walker.
29 *Intermittent Claudication. D. M. Greig.
30 Points in the Surgical Treatment of Goiter. T. P. Legg.
31 Treatment of Scarlatinal Otitis; with Special Reference to the Value of the Radical Mastoid Operation. A. K. Gordon.
32 Musculospiral Nerve Injury; Report of Two Cases. E. Harrison.
33 Mucous Colitis Considered as a Nervous Disease, with Special Reference to Treatment. F. Hernaman-Johnson.
34 A Rheumatic Toxemia. C. D. Musgrove.
35 Diseases of the Nervous System. H. C. Thomson.
36 Modern Assistancy. A. Sheperd.

23. **Treatment of Inoperable Sarcoma.**—Up to the present time Coley has had 52 cases of inoperable sarcoma successfully treated with the mixed toxins of erysipelas and *bacillus prodigiosus*. Of these, 35 patients have remained well from 3¼ to 16 years; 28 from 5 to 16 years; and 14 from 10 to 16 years.

26. **Rheumatic Heart Disease in Children.**—When a child is attacked by rheumatism, no matter in what form, it is comparatively exceptional for the heart to escape, while the whole brunt of the disease may fall on that organ, other evidences of rheumatism being either absent or so slight as to pass unnoticed. In other words, the heart is in early life the most vulnerable part of the body to the rheumatic poison. Moreover, when the joints escape, it by no means follows that the cardiac affection is likely to be slight; in fact, the reverse is often the case, and the poison seems to spend itself on the heart. In many of the most severe and intractable examples of rheumatic carditis which Carr has seen, joint affection has been conspicuous by its absence.

Another possible reason why the serious character of rheumatism in childhood is not sufficiently appreciated is, perhaps, because the cardiac lesion often seems at first so insignificant. Valvular disease in a child is a much more serious thing than in an adult because it interferes so materially with the nutrition of the growing tissues. Hence it is one of the wasting diseases of childhood, and when at all severe leads to marked stunting of growth, anemia and actual wasting; the rapid development at puberty imposes an especial strain on such children. The danger is greatest in cases of mitral obstruction, because the orifice becomes surrounded by a ring or curtain of fibrous tissue, which tends slowly to contract, like newly formed fibrous tissue in any other part of the body. Thus the orifice, instead of enlarging proportionately to the increased quantity of blood which has to pass through it as the body grows, may slowly become smaller, and to this extent, therefore, the lesion is progressive, although, as a rule, endocarditis due to rheumatism differs from that due to degeneration in tending to remain stationary when once the secondary results of the inflammation are complete. In children, when once the heart has been damaged, relapsing, subacute attacks of endocarditis and pericarditis and also of myocarditis, are prone to occur, often in the most insidious fashion and quite independently of any obvious joint inflammation. Consequently they are very liable to be overlooked and are a common cause of irreparable damage to the heart.

The following are the evidences on which Carr chiefly relies in forming an opinion in these cases: 1. The presence of subcutaneous rheumatic nodules; (2) any pyrexia, especially in the evening; (3) joint pains; (4) any sudden development of, or increase in, anemia; (5) excessive and persistent rapidity of the pulse. The first and most essential point on which to insist in the treatment of such a case is the paramount importance of prolonged and complete rest. The child must not merely be kept in bed, but must remain absolutely recumbent for a period depending on the severity of the attack, but for not less than several weeks. During this time, the child should be kept on very light diet, for his bodily needs are reduced to a minimum, and it is desirable to avoid anything calculated to raise the arterial tension, and so throw additional strain on the left ventricle. Constipation is often very troublesome and most undesirable, so that laxatives must be given frely, as required. Great caution must be exercised in allowing the child increased freedom of movement, as very little exertion or excitement will markedly quicken the pulse and may even lead to a sharp rise in temperature. Sodium salicylate or aspirin, heart stimulants and the ice bag over the precordium are employed as occasion arises.

29. **Intermittent Claudication.**—Greig reports a case due to a venous, not an arterial, affection, which was followed by recovery.

Annals of Tropical Medicine and Parasitology, London

October

37 The Flagellates Occurring in the Intestine of *Glossina Palpalis* and in the Intestine and Proboscis of *G. Morsitans*. A. Kinghorn and R. E. Montgomery.
38 [illegible] in North-Eastern Rhodesia and [illegible] port. A. Kinghorn and R. E. Montgomery.
39 Idem: Third Report. R. E. Montgomery and A. Kinghorn.

November

40 Sanitary Measures and Malaria Epidemics of Athens. J. Cardamatis.
41 An Account of a [illegible] with Hepatic Cirrhosis, Endemic in Eg[illegible] A. R. Ferguson.
42 Biochemical and [illegible] n Trypanosomiasis. A. Breinl and M. [illegible]

Journal Laryngology, Rhinology and Otology, London

November

43 Treatment of Cicatricial Stenosis of the Larynx by the Methods of O'Dwyer and Rogers. D. B. Delavan.
44 Hughlings-Jackson-Mackenzie Syndrome. J. D. Lithgow.

Archives Générales de Chirurgie, Paris

October, III, No. 10, pp. 991-1100

45 *Hernia of the Ureter. (L'uretérocèle.) P. Caccia.
46 *End-Results of Operative Treatment of Mammary Cancer. (Résultats éloignés de l'ablation du sein pour cancer.) Fidelin.
47 *Operative Inoculations of Cancer. (Les inoculations opératoires du cancer.) F. Jacoulet.

45. **Ureterocele.**—Caccia warns that this rare condition should be suspected when a cord is found in a hernial sac. The diagnosis is made most readily in femoral hernia when access is obtained through the inguinal canal. He reports 2 cases and reviews the 22 which he has found on record and also 4 others in which an extraperitoneal cystocele was combined with the hernia of the ureter. A lipoma seems to be a frequent factor in dragging the ureter down in this way.

46. **History after Removal of Mammary Cancer.**—Fidelin's article is based on the experiences in five important French surgical clinics, the ultimate outcome being known in 234 cases of cancer of the breast, which he compares with others' statistics. A final cure is rare; recurrences are known twenty and thirty years after the operation without symptoms in the interim. An important lesson from his investigations is the benefit that may be derived from several successive operations in certain cases with multiple local recurrences. Life is prolonged, and the patient's courage maintained. The proportion of recurrences has dropped from 76 per cent. in 1865 to 25 per cent. by 1905 in certain large statistics, but the best technic to prevent recurrence is still undecided. Fidelin thinks that Handley's suggestions that the cancer spreads as a vine grows and that the technic should be based on this principle, certainly deserve attention.

47. **Inoculation of Cancer During its Removal.**—Jacoulet is convinced that study of operative inoculation will explain many cases of recurrence of cancer. The soil seems to be especially favorable for the development of cancer germs in certain patients. He has known of two unreported cases and reviews three others in which cancer of the tongue recurred from inoculation of cancer cells, by the instrument in some of the cases. The site, the size and the shape of the recurring nodule and the absence of recurrence in the scar, all point to inoculation by a solution of continuity in the mucosa, the result of application of the forceps to draw the tongue out, the recurring nodule developing at the point where the tongue was seized while the primary growth on the base of the tongue or roof of the mouth was being excised. In another case, the bistoury with which a cancerous gland had been cut out was used to make a vertical incision to liberate the lip drawn up too much by the suture after removal of an epithelioma on the lower lip. Several months later the patient returned with a recurring nodule at the point where the bistoury had been used first. The symmetrical incision was free from recurrence as the bistoury had been wiped free from contamination by the first incision.

Archives des Maladies du Cœur, etc., Paris

October II, No. 10, pp. 545-608

48 Digestive Enzymes (Protease and Lipase) of the Leucocytes. Their Properties and Importance in General Pathology. N. Fiessinger and P. L. Marie.
49 *Experimental Research on Functional Mitral Insufficiency. C. Lian.

49. **Experimental Mitral Insufficiency.**—Lian's research on dogs has confirmed the fact that dilatation of the left ventricle may entail functional mitral insufficiency revealed by a systolic souffle at the apex. It may subside and reappear, with the heart apparently normal in the intervals. The condition most liable to entail it is when extreme dilatation is accompanied by factors inducing simultaneous overexertion of the left heart and fatigue of the myocardium.

Bulletin de l'Académie de Médecine, Paris

November 2, LXXIII, No. 35, pp. 213-258

50 *Acceleration of Gaseous Interchanges and Organic Demineralization in the Pretuberculous and Tuberculous Condition. (L'accélération des échanges respiratoires et la déminéralisation organique chez les prétuberculeux et chez les phtisiques.) A. Robin.
51 Production of Heat by Living Beings and Influence of Food. [illegible] ar les êtres vivants et la [illegible] re.) Weiss.
52 [illegible] surrénale.) E. Boinet.

50. **Early Differentiation of Tuberculosis.**—Robin's statements in regard to the increased intensity of the nutritional processes in the tuberculous are contrary to the generally accepted ideas as to the necessity for stimulating the biochemical processes in the tuberculous. He insists that treatment should be directed to retard instead of stimulating them, and presents here new arguments to sustain his position, among them a table showing the average consumption of oxygen and production of carbon dioxid in 24 healthy and 44 tuberculous individuals: 3.446 and 3.789 c.c. of oxygen being consumed in the healthy and 5.16 and 4.714 in the tuberculous, and 2.620 and 2.931 carbon dioxid produced in the healthy, and 3.785 and 3.569 in the 35 tuberculous men and 19 tuberculous women per kilogram of weight and per minute. The difference is still more striking in the tables that are computed per minute irrespective of the body weight. The difference grows constantly greater as the tuberculosis progresses, and this acceleration of the respiratory interchanges is frequently observed in the offspring of the tuberculous and also in alcoholism, in extreme fatigue from any cause, in worry and in all the predisposed. The "predisposition" to tuberculosis is thus seen to be a nutritional anomaly identical in all the predisposed and capable of being recognized and measured. Robin's further research has also confirmed the fact that the proportion between the inorganic residue of the urine and the total residue (in normal conditions 30 to 32 per cent.) is unusually large just preceding and during the first and second stages of tuberculosis, dropping below normal in the terminal stage. The bones of tuberculous individuals show abnormally small proportions of phosphoric acid, lime

and silica. The consumptive seems to drain the bones of the mineral elements to eliminate them in excessive proportions, while the tissues need these very elements to sustain them in their struggle against the tubercle bacillus. The points for diagnosis of the predisposition or early infection and for prognosis are thus: (1) increased production of carbon dioxid and consumption of oxygen; (2) organic demineralization; (3) reduction in the "coefficient of robustness" (estimated by Pignet by subtracting from the height the sum of the chest measure and weight. For example: height 1.69 meters, minus the chest measure 0.73 meters, plus the weight 82 kilograms, gives 14 as the *coefficient de robusticité.*); (4) abnormally rapid growth; (5) unusual thinness in proportion to the food ingested; (6) early fatigue; (7) long, narrow and shallow chest, small xiphoid angle, the ribs oblique, etc.; (8) exaggeration of the cutaneous radiation of heat; (9) sensation of internal heat, the average temperature generally above the average, and rapid rises of temperature; (10) abnormally small difference between the temperature in the axilla and the temperature of the skin elsewhere; (11) abnormally rapid rate of respiration and pulse; and (12) abnormally low arterial pressure. In the neurotic-gouty type, on the other hand, the pulse and respiration rate is abnormally low and the arterial blood pressure high, while the radiation of heat and the average temperature are below normal. It is thus possible, Robin declares, to recognize the pretuberculous and the incipient stages of tuberculosis and by appropriate measures to transform the soil and thus reenforce the natural defensive processes.

52. **Organotherapy of Suprarenal Disease.**—Boinet reports the postmortem findings in 44 cases of various suprarenal affections, all confirming the existence of a sclerous inflammation of the suprarenals in the syndrome of Addison's disease as also with mere bronzing of the skin and mucosæ and with the abnormal pigmentation sometimes observed in the tuberculous. In 20 other cases of sclerosis of the suprarenals, encountered in the course of 900 autopsies of adults at the Hotel Dieu, the diagnosis had been uncertain on account of the absence of pronounced bronzing. Suprarenal insufficiency is suggested by a combination of one or more circulatory disturbances (small unstable pulse, low arterial tension, the "white line" or track of pallor that follows when a blunt instrument is drawn along the abdominal wall, tachycardia and chilliness); digestive disturbances (anorexia, vomiting, diarrhea or constipation); toxic nervous disturbances resulting from irritation of the various nerve plexus around the suprarenal capsules, and general disturbances (anemia, emaciation, considerable and progressive amyotrophy). The diagnosis is confirmed by the benefit from organotherapy; benefit is also liable in cases of inoperable cancer in the suprarenals. He advises ingestion of sheep or calf suprarenal capsules fresh or desiccated in a vacuum, or subcutaneous injection of extract of the whole gland. The diagnosis may be facilitated by hastening the development of bronzing by measures for revulsion. Boinet's first communication on this subject was summarized in these columns Nov. 20, 1909, page 1743.

Lyon Médical, Lyons

September 2 . XLI, No. 39, pp. 501-540

53 *Importance of Sterilizing Infants' Clothing. (Emploi des linges stérilisés chez le nourrisson.) E. Weill.

October 17, No. 42, pp. 633-688

54 *Treatment of Pulmonary Tuberculosis by Compression from Pneumothorax Artificially Induced. (Traitement de la tuberculose pulmonaire par la mise au repos du poumon au moyen de l'injection d'azote dans la cavité pleurale.) Balvay and Arcelin.

October 24, No. 43, pp. 689-728

55 Acute and Curable Form of Tic Douloureux of the Face. M. Lannois.

53. **Importance of Sterilizing Infants' Clothing.**—Weill has found that the steam laundry cannot be relied on to render infants' diapers and other clothing absolutely sterile. They are liable to acquire germs even on their passage from the laundry to the infant. From a nurse's apron, fresh from a steam laundry in the building, streptococci, staphylococci, diplococci and other germs were cultivated, as also diplococci and bacilli from an infant's cap, laundered and kept two days in the ward linen closet. Weill now insists on having the infants' clothing sterilized by steam under pressure for twenty minutes, the clothing sorted out into sets after laundering, placed in bags and sterilized and kept in the bags until used. One bag contains the inner garments, another the slips and caps; a third, a complete outfit for one infant, and a fourth the gauze sponges used in washing the child. These bags are sterilized and not opened till needed. The bag with the complete outfit is hung on the bedstead, to be used in a hurry at need; the other bags are kept in the linen closet. The nurses are trained never to let their hands come in contact with the part of the linen that comes next the infant's skin. The infant is washed with the gauze sponges taken from the bag, dipped in boiled water, and a little sterilized olive oil poured on them. The nurse's hands are scrubbed and dipped in bichlorid solution before she takes anything out of the bag; she then closes the bag or metal box again at once. The diapers are changed as soon as they are wet. When a bed is vacated, the mattress is disinfected and the iron singed with alcohol. When steam disinfection is not practicable, he has the linen moistened well and ironed till dry. On introducing these strict measures, the mortality in his service dropped from 41.87 per cent. in 1901 to 26.7 per cent. in 1903 and it has been declining since, while the number of cases of acquired cutaneous affections has dropped almost to zero. The infants are all in the same ward, but he tries to keep those with skin diseases at one end of the ward, with separate nurses, and all the nurses are trained to wash their hands with a bichlorid solution before feeding or changing the diaper of an infant. Each child has its own rubber blanket, washed in bichlorid solution each morning; this is spread over a pillow and the infant is placed on it for the physician's inspection. But these precautions failed to ward off infection until the linen was systematically sterilized, when all trouble from this source ceased at once. Not only in prophylaxis but in promoting the healing of cutaneous lesions the sterilized linen has had a good effect. The skin of an infant, he declares, is so sensitive and receptive that it should be regarded and treated just like an open wound. It should be kept covered up, dry and aseptic, while it obeys its inherent tendency to spontaneous anatomic and physiologic repair. This article was presented at the recent international medical congress at Budapest.

54. **Immobilization of Lung by Injection of Nitrogen.**—Balvay and Arcelin have applied this method of treatment in several cases of open tuberculosis and have obtained good results. They injected at first 400 c.c. of nitrogen, repeating the injection four days later with 1,000 c.c., reinjecting about the same amount at similar intervals until the lung was completely immobilized. The pleura absorbs daily from 50 to 80 c.c. of the gas. The febrile temperature drops to normal almost at once, and in the afebrile cases there is no longer a rise of temperature on moderate exertion. By renewing the injection before each menstrual period, it proved possible to render it afebrile in patients who had fever usually at this time. The cough was increased at first after the injections, inducing expectoration. Benefit was observed only in the unilateral cases, however; when both lungs were involved the process in the non-compressed lung became rapidly aggravated, but laryngeal complications were no contraindication. Syncope occurred sometimes in patients with unusually small hearts, but never otherwise. One very anemic patient with multiple lesions and abnormally small heart, died in syncope a few days after a single tentative injection of 500 c.c. of the nitrogen. The principal advantage of the treatment is the way in which it drains the lung and favors cicatrization while preventing secondary infection from inhaled germs and congestion liable to entail hemoptysis.

Presse Médicale, Paris

October 27, XVII, No. 86, pp. 753-760

56 *Treatment of Nephritis with Serum from Renal Vein. P. Spillmann and J. Parisot.

October 30, No. 87, pp. 761-776

57 Dust in Transmission of Tuberculosis. (Contagion de la tuberculose par les poussières sèches.) P. Le Noir and J. Camus.

58 The Generally Disregarded Organic Elements in the Urine in Diabetics. (L'indosé urinaire chez les diabétiques.) H. Labbé and G. Vitry.

59 Adherence of Molecules and Its Importance in Various Biologic Phenomena. (Étude de l'adhésion moléculaire et de son intervention dans divers phénomènes biologiques.) M. Mayer.

56. **Treatment of Nephritis with Serum from the Renal Vein.**—Spillmann reviews the evidence that has been accumulating in the last few years in regard to the efficacy of treatment of nephritis with the internal secretion of the kidney as obtained from the blood issuing out of the organ, in the renal vein. He here reports in addition careful research on a number of patients under this treatment, recording day by day the metabolic findings, etc. Goat serum was used, taken from the renal vein, and from 10 to 50 c.c. was the usual dose. The action of the treatment seems to be about the same as that of ordinary organotherapy and the indications are the same for each, that is, conditions suggesting insufficiency of the kidneys. The effect is prompter and more pronounced the milder the kidney affection. The specific effect is seen instructively when the serum is injected into healthy persons, the amount of urine and proportion of chlorids eliminated increasing notably under its influence. His cases included 4 patients with acute and 6 with chronic nephritis, uremic coma or nephritis from corrosive sublimate poisoning in 1 case each, and 2 patients with an intercurrent kidney lesion during pneumonia. Under the influence of the injections the diuresis increased to 6, 8 and even 10 liters during the twenty-four hours; the edema and dyspnea subsided and the heart was markedly relieved. The effect was evidently the result of a specific stimulating action on the kidneys, far more effectual than ordinary diuretics, and effective in many cases in which no benefit was apparent from the latter.

Semaine Médicale, Paris

November 10, XXIX, No. 45, pp. 531-540

60 *Median Suprahyoid Phlegmons. F. Lejars.

60. **Phlegmon Below the Floor of the Mouth.**—Lejars has encountered a number of cases of severe diffuse phlegmon in the floor of the mouth, sometimes pushing up the tongue and sometimes only discoverable by palpation with one finger in the mouth and the other under the chin. At first he treated them by incising in the floor of the mouth but found that this did not reach the root of the evil, while a median incision under the chin, above the hyoid bone, answered the desired purpose most effectually, incising from the tip of the chin nearly to the hyoid bone. He does not wait for pus to collect, the rapid swelling and its extension testifying to the gravity of the infection. The greatest danger is from half measures and delay, and he cites one case in a vigorous man of 65. The swelling was not very pronounced and there was little pain and fever. As the general condition continued good nothing was done for several days, and then a little blood was evacuated through an incision through the floor of the mouth; no pus was discovered but some relief followed. The swelling kept up, however, until the entire chin was involved. The actual cautery was applied and a little pus and serous fluid escaped. Considerable relief followed for two days, but then the tumefaction spread on both sides and an incision showed considerable destruction from the infectious phlegmon and the patient soon succumbed. All this would probably have been averted if the focus had been opened from below in time and amply drained. An incision in the mouth is adequate only when the abscess is circumscribed and, protruding into the mouth, is thus easily accessible.

Berliner klinische Wochenschrift

November 1, XLVI, No. 44, pp. 1965-2004

61 *Chlorinated Lime in Dermatology. (Anwendung des Chlorkalks in der [illegible]
62 [illegible] ihibiting Body in the Wasser- [illegible] Hemmungskörperbestimmung [illegible] iktion.) J. Zeissler.
63 *Derangement of Suprarenal Functioning in Infectious Diseases. (Störung der Nebennierenfunktion bei Infektionskrankheiten.) F. Lucksch.
64 *Importance of Bronchoscopy for Internal Medicine. A. Ephraim. Commenced in No. 43.

November 8, No. 45, pp. 2005-2044

65 *Early Operation in Appendicitis. (Die Frühoperation bei Appendicitis.) E. Sonnenburg.
66 Cholera Not a Nitrous-Acid Intoxication. (Ist die Choleraerkrankung eine Nitritvergiftung?) A. A. H. van den Bergh and A. Grutterink.
67 Decline in Tuberculosis Mortality. (Weitere Mitteilungen zur Abnahme der Tuberkulosesterblichkeit.) B. Fränkel.
68 Allowing Parturients to Get Up Early. (Frühaufstehen der Wöchnerinnen.) R. Müllerheim.
69 *Serodiagnosis of Syphilis of the Aorta. (Ueber die Wassermann'sche Reaktion bei Aortenerkrankungen und die Bedeutung der provokatorischen Quecksilberbehandlung für die serologische Diagnose der Lues.) K. Donath.

61. **Bleaching Powder in Dermatology.**—Binz reports further success from the method of treating chilblains with chlorinated lime, mixed with 9 parts of paraffin ointment, and he here reviews Ehrenberg's application of this treatment in 15 cases of intractable erysipelas. He advises commencing with a 5 per cent. ointment at first, applying it once a day, gently, to a small part of the focus, then increasing to 10 per cent. if there is no idiosyncrasy. Sodium thiosulphate may be used in a 1 to 1,000 solution to rinse off the chlorin, if required. No by-effects were observed in the 15 erysipelas cases except injury of the linen if the part was not sufficiently protected.

63. **Disturbances of Suprarenal Functioning in Infectious Diseases.**—Lucksch reports experimental research which confirms his assumption that defective or lacking suprarenal functioning is an important factor in infectious diseases. The injurious influence of the infectious toxins on the chromaffin system should be borne in mind, and the advisability of giving adrenalin to combat the diminishing blood-pressure should be considered.

64. **Bronchoscopy in Internal Medicine.**—Ephraim has found bronchoscopy useful in 95 cases in revealing the cause for the puzzling phenomena observed. In some cases a varix in the trachea explained hemoptysis and permitted a cure. In one case a syphilitic tumor was discovered as the cause of a peculiar cough and the patient was promptly cured. Killian once found and removed a sarcoma in the lower third of the trachea which had caused no symptoms except recurring hemoptysis. Anesthesia is not required for bronchoscopy unless possibly in children.

65. Address at the recent International Medical Congress at Budapest.

69. **Mercurial Test in Serodiagnosis of Syphilis.**—Donath reports a positive serodiagnosis in 85.3 per cent. of 27 cases of pure aortic insufficiency, mesaortitis, or aneurism. Among the 27 cases were 3 in which there was a history of articular rheumatism, but the features of the joint affection showed that it must have been of syphilitic nature rather than true rheumatic polyarthritis. The gummatous form of syphilitic synovitis and ostitis may be accompanied with disturbances suggesting rheumatism. The aortic affection in these cases had previously been regarded as the consequence of infectious articular rheumatism, and in 4 other cases abuse of tobacco and in 2 abuse of alcohol suggested the toxic form of mesaortitis until the serodiagnosis gave the clue. In many patients suspected of syphilis but giving a negative reaction, it is possible to transform the negative into a positive response by a tentative brief course of mercury. He calls this the "provocatory mercurial treatment." After inunction of 12 gm. of gray ointment during the week the Wassermann reaction became positive. This is similar to what is observed in chronic malaria when small doses of quinin may induce an acute phase of the disease.

Deutsche medizinische Wochenschrift, Berlin

November 4, XXXV, No. 44, pp. 1905-1952

70 *Diagnosis and Treatment of Tumors in Spinal Canal. (Geschwülste innerhalb des Wirbelkanals.) H. Oppenheim.
71 *Pathology and Treatment of Sympathetic Ophthalmia. C. Horstmann.
72 *Serodiagnosis in Syphilitic Eye Lesions. (Serodiagnose der Syphilis in der Augenheilkunde.) G. Schumacher.
73 *Relations Between Tuberculosis and Syphilis in Eye Lesions. (Beziehungen der Tuberkulose zur Syphilis bei Augenleiden.) Id.
74 *Tumor in Frontal Sinus. (Zur Kasuistik der Stirnhöhlengeschwülste.) R. Herzenberg.
75 Seroreaction in Leprosy with Syphilis Antigen. (Komple[illegible] pra mit syphilitischem Antigen.) J. [illegible]
76 [illegible] Pressure in Prognosis of Diphtheria. [illegible] tung des Blutdrucks bei der Diph[illegible]
77 Tuberculosis in Infants. (Zur Klinik der Säuglingstuberkulose.) K. Mallinckrodt.
78 *Correction of Stiff Hip Joint. (Zur Mobilisierung ankylosierter Hüftgelenke.) O. Meyer.

70. **Intraspinal Tumors.**—Oppenheim has been able to cure 13 out of 25 patients with tumors in the spinal canal, thus restoring 52 per cent. to comparative health, including 40 per cent. in which the cure may be called complete. From helpless paralytic cripples they have been restored to active life; one young woman has married since. In 6 of these more favorable cases, the tumor was in the dorsal, in 4 in the cervical, and in 1 in the lumbar region, and in 2 in the cauda equina. He operates even when he is unable to determine the exact location of the tumor within a few segments; as by intradural probing above or below it is possible to disclose the tumor. When the location is very uncertain, it may be wise to wait until the anesthesia has reached a constant upper level, the patient being kept under constant supervision. If the diagnosis wavers between a tumor, circumscribed spinal serous meningitis and hypertrophic pachymeningitis, laminectomy is indicated for all if antisyphilitic treatment affords no relief. He does not advocate surgical intervention on tumors in the spinal cord itself, although benefit may be derived from laminectomy and slitting the dura to give the growth more room.

71. **Sympathetic Ophthalmia.**—Horstmann advises prompt enucleation in prophylaxis of sympathetic inflammation, as no other measures guarantee against it.

72-73. **Serodiagnosis in Syphilitic Eye Affections.**—Schumacher reports examination of 215 ophthalmologic patients and emphasizes the value of the Wassermann test for differentiation, although a positive reaction is rare with inherited syphilis free from recent acute symptoms. His research shows that tuberculosis may develop in the internal eye on the basis of some anomaly due to inherited syphilis. In some cases general tuberculin treatment should be combined with the ordinary antisyphilitic measures. The latter alone suffice when the tuberculous process is latent, but when the syphilis is latent and the tuberculosis manifest, both should be treated to increase the resisting power of the organism and thus render conditions unfavorable for the progress of the tuberculosis.

74. **Tumor of the Frontal Sinus.**—Herzenberg's patient was a man of 56 with a cystic tumor for fifteen years, for which he refused operation until it measured 38 by 35 cm. An incision released 1,800 gm. of a reddish brownish fluid and the brain was found much compressed, while the bone had been worn away. The case is remarkable from the absence of brain symptoms and of pain or other sensation except the discomfort from the large tumor, although after its removal there was room for the fist between the skull and the brain.

78. **Mobilization of Ankylosed Joints.**—Meyer expatiates on the fine results to be attained by excision of part of the joint and interposition of a flap consisting of fat tissue and a thin layer of muscle, fastened with silk sutures to form a cushion between the two bones. He gives a detailed account of a case of ankylosis of the hip joint in which application of this technic restored a cripple to active life. The patient was a woman of 38, with kyphosis from spondylitis in childhood; the coxitis entailing the ankylosis had healed about the age of 14.

Münchener medizinische Wochenschrift

November 2, LVI, No. 44, pp. 2249-2296

79 *Experimental Research on the Growing Eye. (Versuche am wachsenden Auge.) K. Wessely.
80 Acquired Diverticula of the Appendix. (Zur Pathologie und Klinik der erworbenen Wurmfortsatzdivertikel.) G. E. Konjetzny.
81 Antitrypsin Content of Blood Serum in Mental Derangement (Ueber Antitrypsingehalt des Blutserums bei Geisteskranken.) Jach.
82 The Cerebrospinal Fluid in Experimental Trypanosomiasis. (Untersuchungen des Liquor cerebrospinalis auf Vermehrung der Zellelemente und Eiweisskörper bei Trypanosomiasis der Hunde.) F. Apelt.
83 A Diplococcus Epidemic Resembling Influenza. C. Rose.
84 Electrocardiograms of Irregular Heart Action. (Die Arythmie des Herzens im Elektrokardiogramm.) A. Hoffmann.
85 *Primary Pyelitis. L. Saathoff.
86 *Successful Serotherapy of Severe Tetanus. L. Simon.
87 *"Tuberculin Vaselin" for the Ocular Diagnostic Reaction. (Modifikation der Konjunktivalprobe für die Praxis.) A. Wolff-Eisner.
88 Improved Roentgen-Ray Technic. F. Dessauer and B. Wiesner.
89 Mobility of the Corpuscles in Vaccine and Smallpox. (Ueber die Beweglichkeit der Körperchen der Vakzine und der Pocken.) G. Volpino.
90 Fitness for Military Service of German Recruits. (Zur Frage der Militärtauglichkeit der zum einjährigfreiwilligen Dienst berechtigten Wehrpflichtigen Deutschlands.) Schwiening.

79. **Experiments on the Growing Eye.**—Wessely has been examining the influence of various operations on the eye before it has reached its full development. The results show that by transferring experimental research from adult to very young animals a new field is thrown open for investigation in various lines, not only for the eye but for other organs. The growing organ reveals the action of external influences much more instructively than the mature.

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Therapie der Gegenwart, Berlin

November, L, No. 11, pp. 505-552

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Gazzetta degli Ospedali e delle Cliniche, Milan

October 26, XXX, No. 128, pp. 1353-1360

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October 28, No. 129, pp. 1361-1368

114 Alopecia from Experimental Freezing. (Alopecia temporanea nel coniglio da congelazione.) A. Fontana.
115 Spinal Anesthesia in 579 Cases. (Contributo clinico alla rachistovainizzazione.) O. Ortali.

October 31, No. 130, pp. 1369-1384

116 Diagnostic Importance of Indican in the Urine with Obstruction of Pancreatic Duct. (Comportamento dell'indacano urinario nell'occlusione del dotto pancreatico.) Zuccola.

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117 *The Mechanical and Biologic Factors in the Pathology of Pregnancy. (Il fattore meccanico ed il fattore biologico nella patologia della gravidanza.) L. Mangiagalli.

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70. Intraspinal Tumors.—Oppenheim has been able to cure 13 out of 25 patients with tumors in the spinal canal, thus restoring 52 per cent. to comparative health, including 40 per cent. in which the cure may be called complete. From helpless paralytic cripples they have been restored to active life; one young woman has married since. In 6 of these more favorable cases, the tumor was in the dorsal, in 4 in the cervical, and in 1 in the lumbar region, and in 2 in the cauda equina. He operates even when he is unable to determine the exact location of the tumor within a few segments, as by intradural probing above or below it is possible to disclose the tumor. When the location is very uncertain, it may be wise to wait until the anesthesia has reached a constant upper level, the patient being kept under constant supervision. If the diagnosis wavers between a tumor, circumscribed spinal serous meningitis and hypertrophic pachymeningitis, laminectomy is indicated for all if antisyphilitic treatment affords no relief. He does not advocate surgical intervention on tumors in the spinal cord itself, although benefit may be derived from laminectomy and slitting the dura to give the growth more room.

71. Sympathetic Ophthalmia.—Horstmann advises prompt enucleation in prophylaxis of sympathetic inflammation, as no other measures guarantee against it.

72-73. Serodiagnosis in Syphilitic Eye Affections.—Schumacher reports examination of 215 ophthalmologic patients and emphasizes the value of the Wassermann test for differentiation, although a positive reaction is rare with inherited syphilis free from recent acute symptoms. His research shows that tuberculosis may develop in the internal eye on the basis of some anomaly due to inherited syphilis. In some cases general tuberculin treatment should be combined with the ordinary antisyphilitic measures. The latter alone suffice when the tuberculous process is latent, but when the syphilis is latent and the tuberculosis manifest, both should be treated to increase the resisting power of the organism and thus render conditions unfavorable for the progress of the tuberculosis.

74. Tumor of the Frontal Sinus.—Herzenberg's patient was a man of 56 with a cystic tumor for fifteen years, for which he refused operation until it measured 38 by 35 cm. An incision released 1,800 gm. of a reddish brownish fluid and the brain was found much compressed, while the bone had been worn away. The case is remarkable from the absence of brain symptoms and of pain or other sensation except the discomfort from the large tumor, although after its removal there was room for the fist between the skull and the brain.

78. Mobilization of Ankylosed Joints.—Meyer expatiates on the fine results to be attained by excision of part of the joint and interposition of a flap consisting of fat tissue and a thin layer of muscle, fastened with silk sutures to form a cushion between the two bones. He gives a detailed account of a case of ankylosis of the hip joint in which application of this technic restored a cripple to active life. The patient was a woman of 38, with kyphosis from spondylitis in childhood; the coxitis entailing the ankylosis had healed about the age of 14.

Münchener medizinische Wochenschrift

November 2, LVI, No. 44, pp. 2249-2296

79 *Experimental Research on the Growing Eye. (Versuche am wachsenden Auge.) K. Wessely.
80 Acquired Diverticula of the Appendix. (Zur Pathologie und Klinik der erworbenen Wurmfortsatzdivertikel.) G. E. Konjetzny.
81 Antitrypsin Content of Blood Serum in Mental Derangement (Ueber Antitrypsingehalt des Blutserums bei Geisteskranken.) Jach.
82 The Cerebrospinal Fluid in Experimental Trypanosomiasis. (Untersuchungen des Liquor cerebrospinalis auf Vermehrung der Zellelemente und Eiweisskörper bei Trypanosomiasis der Hunde.) F. Apelt.
83 A Diplococcus Epidemic Resembling Influenza. C. Rose.
84 Electrocardiograms of Irregular Heart Action. (Die Arythmie des Herzens im Elektrokardiogramm.) A. Hoffmann.
85 *Primary Pyelitis. L. Saathoff.
86 *Successful Serotherapy of Severe Tetanus. L. Simon.
87 *"Tuberculin Vaselin" for the Ocular Diagnostic Reaction. [illegible] unktivalprobe für die Praxis.) A. [illegible]
88 [illegible] echnic. F. Dessauer and B. Wiesner.
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113. **Neuroses of the Sympathetic System in Measles.**—Licciardi discusses a recent epidemic of measles at Catania which involved young and old; in one family two men of 40 and 47, with a baby had the disease, and several instances were known in which the disease had occurred for the third time. Bronchitis and pneumonia were frequent and severe complications, as also gastrointestinal catarrh, sometimes presenting a syndrome suggesting typhoid and accompanied by signs of meningeal irritation. In several cases he encountered a neurosis of the sympathetic system as he describes in detail in 3 typical instances. One was in a child, nearly 2 years old; during the eruptive stage of measles spasm of the larynx developed. The vocal cords seemed to contract slowly to close the throat completely until the carbon dioxid accumulating in the blood stimulated the respiration center and induced a profound inspiration. The spasm was then suspended for an instant. While considering intubation, mustard to the chest, and bromids, cannabis indica and belladonna were given and in the

course of a few hours the spasm subsided. It returned again two days later when it yielded as before to the same measures. Another child had attacks of typical asthma for the first time during measles; nothing of the kind was known in the family before. In a third child the spasm affected the intestines; the intense pain was not accompanied by any objective signs of trouble but continued unmitigated until relieved by the same measures used in the other cases, bromids, cannabis indica and belladonna.

117. Biologic Factors in Pathology of Pregnancy.—Mangiagalli does not regard heart disease as such a serious factor in the pathology of pregnancy as some assume. In his experience the mortality has been only 6.5 per cent. and this only when the food and conditions in general were very unfavorable. The placenta is no longer considered as merely an osmotic and dialyzing membrane interposed between the mother and fetus; it is now known to be an organ with important functions, and biologic factors alone can explain the changes in the kidney with pregnancy. All the organs seem to have their resisting powers in respect to infections reduced during pregnancy, but pneumonia seems to be the most threatening of all. The prognosis is always grave and the effect of artificial interruption of the pregnancy is not felt in time to be of much use in this self-limited disease. This measure, however, he declares, is frequently indicated in case of renal or hepatic complications, but only exceptionally in heart disease.

119. Sign of Intestinal Stricture from Neoplasm.—Minerbi reports a case of tumor palpable to the left of the umbilicus with other phenomena suggesting a tuberculous process involving the intestine and peritoneum except for the absence of ascites, fever and response to the tuberculin test. This threw the balance of the diagnosis in favor of cancer, and this assumption was confirmed by the behavior of the tumor when air was blown into the rectum from a bicycle pump. At each stroke of the piston the palpating hand on the tumor felt a kind of expansive pulsation in the tumor similar to the pulsation in the wall of an aneurism in an artery at each systole. This prompt action of the insufflated air was felt only in one side of the tumor, which confirmed the assumption that the growth was a lymphosarcoma in the retroperitoneal glands which in the course of its three years of growth had involved and finally induced stenosis in the descending colon. The factors indispensable for this air-pump sign of stenosis are continence of the sphincter, stenosis not far above and sufficiently pronounced to confine the air, with the walls of the bowel infiltrated with the growth so as to be palpated while some of the wall still retains sufficient elasticity to yield to the pressure of the insufflated air. The discovery of a second small tumor in the epigastrium suggested the lymphatic nature of the cancer in this case.

120. Immunization Against Syphilis by Other Venereal Disease.—Calabrese states that he has been impressed with the fact that among a thousand individuals with constitutional syphilis examined who had contracted some other venereal disease during the secondary phase of their syphilis, none had been infected with these other affections before except in a very small proportion, not over 7.5 per cent., and in these there had been an interval of several years before the syphilitic infection. He calls attention to this fact in his experience and urges others to collect information on this point, his impression being that individuals infected with gonorrhea or soft chancre are immune to infection with syphilis. The toxins elaborated by the gonococcus and the Ducrey bacillus, while harmless, comparatively speaking, for the bearer, seem, he asserts, to exert an immunizing power against the pale spirochete capable of aborting incipient syphilis entirely. He is now conducting research in this line, striving for eventual immunization against syphilis by this means.

Policlinico, Rome

October 31, XVI, No. 44, pp. 1381-1412

121 *Carbolic Treatment of Traumatic Tetanus. (Su tre casi di tetano traumatico. Delirio postetanico: cura alla Baccelli.) U. Conforti. Commenced in No. 43.

November 7, No. 45, pp. 1413-1444

122 Modification of the Zammit Milk Test. (Di una modificazione alla lattoreazione de Zammit: Siero-lattoreazione.) G. Pulvirenti.

121. Phenol in Tetanus (Baccelli Method).—Conforti remarks that the Baccelli method of treating tetanus is in such general use in Italy and with such constantly good results that no one thinks now of reporting cases any more than instances of recovery from diphtheria under antitoxin treatment. All accept the favorable outcome as a matter of course: the record includes now several hundred cases, with or without associated antitetanus serum. It was his unusual experience to encounter 3 typical cases of traumatic tetanus in the course of one month recently, and he reports them in detail to show the workings of the Baccelli method. [It was described in THE JOURNAL, June 3, 1899, page 1249. The main features are first to cleanse the wound thoroughly with strong antiseptic solution, place the patient in a quiet dark room, plug the ears to keep out unavoidable noises, and give subcutaneous injections of a 2 or 3 per cent. solution of phenol at two or three hour intervals, generally along the spinal column. If the case is of moderate severity, Baccelli commences with 0.2 gm. (3 grains) of the phenol in the 24 hours, rapidly increasing to double or triple this amount. The patient in the grip of tetanus bears astonishingly large amounts of phenol. He claims that it antagonizes the tetanus toxin and quiets the nervous system. In one of his cases 0.72 gm. of phenol was given daily for 6 days, the patient receiving 511 separate injections with lesser amounts in the course of 36 days with final recovery. The text-books mention the Baccelli method, but without much comment, as a rule. Green's Encyclopedia of Medicine, 1908, states that experimental research seems to prove the method valueless, citing Courmont, 1899, von Török, 1900, and Guillaumin, 1902. But French in his "Practice of Medicine," Babes in "Twentieth Century Practice of Medicine," Woods and others have reported encouraging results with the phenol. Woods' article was summarized in THE JOURNAL, Sept. 16, 1899, page 727.—ED.] Conforti supplemented the carbolic injections with the usual sedatives, bromids, chloral or morphin. The incubation had been two weeks in the first 2 cases and the patients, men of 18 and 62, recovered; about 22 gm. of the carbolic acid had been injected in 24 days in the first and 18 gm. in 21 days in the other case. In the third case the patient, a man of 57, succumbed in less than 48 hours after the first symptoms of tetanus after an incubation of one week. The youngest patient exhibited a tendency to hallucinations and mild delirium after subsidence of the convulsions, without fever. Zeri has reported a similar case of a mild, transient psychosis following the tetanus in a patient treated by this method, but Conforti knows of other cases in which the tetanus toxin alone could be incriminated: no carbolic acid had been used.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

Index-Catalogue of Medical and Veterinary Zoology, Part 24 (Authors: R to Rizzo.) and Part 25 (Authors: Roack to von Rzewuski). By C. Wardell Stiles, Ph.D., Consulting Zoologist of Bureau of Animal Industry, and Albert Hassall, M.R.C.V.S., Assistant in Zoology, Bureau of Animal Industry. Paper. Washington: Government Printing Office, 1909.

Laboratory Methods for the Experimental Study of Immunity. By Eugene F. McCampbell, Associate Professor of Bacteriology, Ohio State University, Columbus, Ohio. Cloth. Pp. 197. Price, $1.25. Columbus: The F. J. Heer Printing Co., 1909.

Transactions of the American Surgical Association. Vol. XXVII. Edited by Richard H. Harte, M.D., Recorder of the Association. Cloth. Pp. 628, with illustrations. For sale by Wm. J. Dornan, Philadelphia, 1909.

Fifth Annual Report of the Henry Phipps Institute, for the Study and Prevention of Tuberculosis. Feb. 1, 1907, to Feb. 1, 1908. Edited by Joseph Walsh, A.M., M.D., Paper. Pp. 463.

The Practitioner's Visiting List for 1910. Flexible leather, wallet-shaped, with flap and pocket and calendar for 2 years. Price, $1.25. Philadelphia: Lea & Febiger.

Transactions of the Thirty-first Annual Meeting of the American Laryngological Association. Held at Boston, 1909. Cloth. Pp. 406, with illustrations.

Index du Progrès Médical, 37, e. Année, 1909-1910. Cloth. Pp. 1016. Paris: Progrès Médical, 41 rue des Ecoles.

Mortality Statistics: 1908. Bulletin 104. Paper. Pp. 133. Washington: Government Printing Office, 1909.

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Original Articles

PUS TUBES IN THE MALE

SURGICAL AND VACCINE TREATMENT *

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CHICAGO

The pus infections of the urinary duct have been for centuries the object of clinical study and surgical exploration; those of the less conspicuous seminal duct remained virtually unexplored until the twentieth century. Pus tubes in the male are to-day as generally unrecognized and surgically ignored as were the pus tubes of the female thirty years ago. Even the accessible epididymis has constantly harbored gonorrheal pus, until recently undetected and undisturbed by surgery.

CLINICAL ANATOMY

Four anatomical features of the seminal duct are clinically important:

1. Ampulla and vesicle are closed by a sphincter of smooth muscle. This muscle, generally ignored by clinicians and anatomists alike, was first described by Kölliker,[1] was named by Hyrtl[2] the "adductor" of the seminal vesicles, and is figured by Bardeleben and Haeckel[3] as the "interampullary muscle." Careful dissection, however, reveals it as a true "compressor ductium seminalium," whose contraction closes the orifices of ampullæ and vesicles. The existence of this sphincter explains the clinically important fact that liquids injected into the vas enter and distend the vesicle before they escape through the ejaculatory duct. This was first demonstrated on the cadaver by de Graaf, and on the living subject by myself.

2. The distensibility of the seminal duct beyond the epididymis is slight; for vesicle and ampulla are enclosed in an unyielding envelope, and the vas has a thick covering of circular muscle fibers. When, therefore, the minute natural outlet, the ejaculatory duct, is occluded by inflammatory swelling or otherwise (and this often happens) the seminal bladder does not expand indefinitely as does the urinary bladder. When the accumulating pus exceeds the limited capacity of ampulla and vesicle, their contractions force the excess contents through the only other outlet, the vas. Since the vas is powerfully contractile, the epididymis far less so, the tail of the epididymis becomes the catch-basin for pus from the vesicle—not only in gonorrhea, but in other urethral infections. This is the pathology of epididymitis, and of the so-called reflex peristalsis of the vas.

Pus infection of the vesicle plus occlusion of the ejaculatory duct, therefore, soon converts the entire seminal duct into a closed abscess. Hence an opening into the vas (vasostomy) affords relief of tension and exit for pus from the entire duct, vesicle and epididymis included, as well as a means of medicating vas and vesicle by injections.

3. Ampulla and vesicle are closely bound to the base of the bladder; infections of the former may, therefore, induce bladder contractions. Cases of "irritable bladder" and "chronic cystitis" without discoverable cause in the urinary tract are thus explained; and these may be promptly relieved by draining the seminal duct, though treatment directed to the bladder be futile. For example, a man 68 years old, referred for prostatectomy to relieve cystitis, was found to have merely a pus infection of left vesicle and epididymis. The vas was opened and pus escaped; the interval between urinations, previously less than an hour, at once lengthened to four hours.

Seminal retention without infection may also induce "irritable bladder." In one such case a distended vesicle was discovered and emptied by the finger in the rectum, a mass of inspissated mucus and spermatozoa being expressed into the urethra; the symptoms of bladder irritation immediately ceased. Doubtless the relief of such irritation, often secured through massage of the prostate (and vesicles), is thus induced.

In "prostatism without prostatic enlargement," the partial retention of urine is at times due to adhesions between the base of the bladder and the adjacent seminal duct.

The symptoms of "cystitis" may, then, proceed from lesions of the seminal as well as of the urinary channel; clinically these two ducts are Siamese twins.[4]

4. Ureter, vesicle and vas are in intimate relation in what I long ago demonstrated to be the "broad ligament of the male."[5] This is a sac of the rectovesical *fascia* which covers vesicles, ampullæ, ejaculatory ducts and utricle, and which is in the new-born male—as in the adult female—a fold of peritoneum; in early *childhood* the serous covering recedes to the top of the vesicles. My designation of seminal duct suppurations as "pus tubes in the male," criticized in certain quarters, is then anatomically well founded.[6]

At the upper angle of the masculine broad ligament on each side, the ureter is crossed by the vas *deferens* and is separated from the top of the seminal vesicle only by fascia. Adhesions following infections of vas and vesicle may, therefore, bind and obstruct the adjacent ureter. Morgan[7] found exactly this condition on exploratory operation, and cured the patient by liberating the ureter from its adhesion to the vesicle; and Young[8] later reported a similar case in which adhesions to the vesicle had produced occlusion of the ureter and destruction of the kidney, compelling nephrectomy.

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* President's address before the American Urological Association, June, 1909.

[1] Kölliker: Gewebelehre des Menschen, iii, 466.

[2] Hyrtl: Lehrbuch der Anatomie, ii, 80.

[3] Bardeleben and Haeckel: Atlas of Applied Anatomy, Fig. 158.

[4] The production of bladder symptoms by lesions of the seminal vesicle has been emphasized by Fuller also (Post-Graduate, January, 1906).

[5] Park: Treatise on Surgery, 1896, ii, 494.

[6] The homology of this fascia with the broad ligament of the female is proved by the embryological studies of Cunéo and Veau (Journal de l'Anatomie et de la Physiologie, 1899, p. 235), who state that "the seminal ducts, thus included between two peritoneal culs-de-sac, are contained in a transverse fold, a *veritable masculine broad ligament*."

As Tandler and Zuckerkandl note, the ureter dilatation incident to prostatic hypertrophy occurs above the point where the ureter is crossed by the vas deferens, and is obviously due to pressure by the latter; hence division of both vasa should be a part of surgical attempts to relieve the results of such hypertrophy, when renal retention exists.

This intimate relation between the juxtavesical ureter and the seminal duct seems, therefore, responsible for considerable kidney and ureter disease hitherto unexplored.

Renal pain—"lumbago" or "nephralgia"—often occurs when the vesicle is distended, and is promptly relieved by emptying the vesicle either through massage or vasostomy. Apparently simple distention of the vesicle may compress the ureter and thus distend the renal pelvis.

IMPOTENCE AND STERILITY

The juxtaposition of the seminal ducts to bladder and rectum renders the relation of pus tubes to vesical and rectal tenesmus sufficiently obvious. The abdominal pain from an infected vas simulates that of ureteral calculus and of appendicitis, and in at least one instance led to a mistaken diagnosis and futile operation for appendicitis by a competent surgeon. The "neurasthenia" caused by prostatovesiculitis, commonly explained by an obscure nervous influence, seems rather a toxemia from the local infection; for it is often relieved by evacuation of pus from the genital tract.

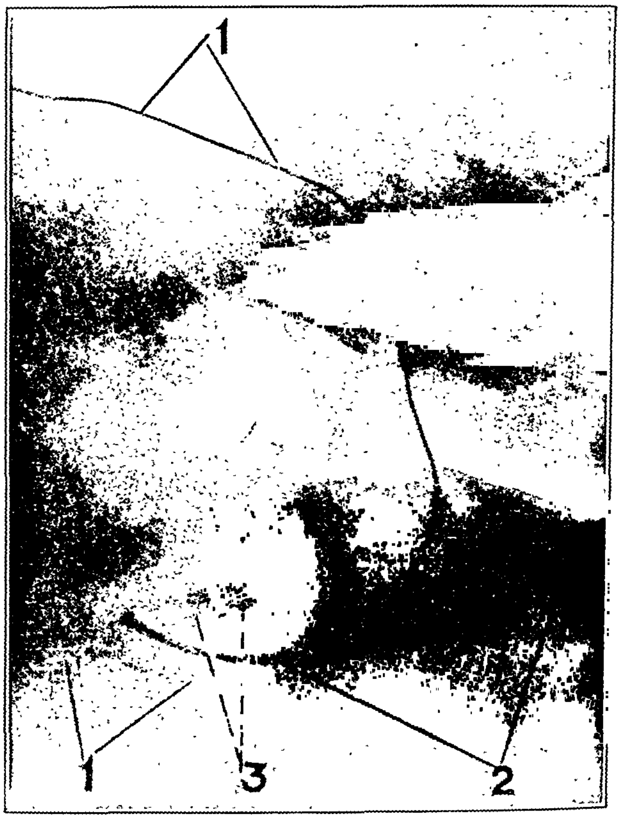
Frequent nocturnal emissions (even in married men), the "hair-trigger" premature emission, and hematospermia are common results of chronic prostatovesiculitis. Extension of chronic infection to the epididymis results in thickening of this tube and chronic hydrocele, which is especially common in elderly men.[9] Extension to the testis induces the sclerosis of that organ studied by Ries,[10] which results in azoöspermia.

Impotence and sterility are especially frequent and important results of pus infections of the seminal tubes. Impotence, when not due to spinal-cord disease or diabetes, is commonly the result of prostatovesiculitis, and is for a long period amenable to intelligent local treatment, though refractory to the routine administration of phosphorus, strychnin, electricity, etc. Sterility may result not merely from mechanical occlusion of epididymes or vasa, but also from infections of the seminal duct, the spermatozoa being non-motile or disintegrated, but regaining form and motility after these infections have been abolished. In fact, the entire pathology of functional derangements and so-called neuroses of the male sexual organs becomes intelligible only through a study of the infections of the seminal ducts. It is well known clinically that early impotence has been sometimes relieved by massage of the prostate, though this is but a crude means of treating chronic prostatovesiculitis; to more efficient methods this hitherto refractory affection is more frequently amenable; for "chronic prostatitis," so-called, notoriously refractory to standard therapy, is usually prostatovesiculitis, needing treatment directed to the vesicles as well as to the prostate.

SURGICAL TREATMENT

The Vesicle.—Incision of the suppurating vesicle from the perineum was made by Lloyd (1889); Dittel, the father of perineal prostatectomy, used his dissection to expose and incise the vesicle (1894). This operation has been improved and used by Fuller[11] in over 100 cases. It is bloody, imperils the integrity of the rectum, but has been in his hands devoid of mortality.

Injection of the vesicle through the ejaculatory duct was first performed in the living subject by Klotz,[12] who introduced the nozzle of a special syringe through the endoscope into the urethral end of the ejaculatory duct, and injected liquid into the vesicle. Epididymitis promptly followed, [illegible]cing infected material through the [illegible] or sounding of the ejaculatory duct has been rendered feasible by the modern irrigation urethroscopes of the Goldschmidt pattern. Yet in practical utility I have found this measure far inferior to vasostomy, which, moreover, involves no expensive instrument, technical skill, injury to verumontanum or ejaculatory ducts, or epididymitis.



Radiogram of median section of male pelvis, showing relation between urinary and seminal ducts in the broad ligament, and accessibility of both through a perineal incision; 1,1, wire in vas deferens; 2, probe in ureter; 3, terminal phalanx of first finger, resting on the seminal vesicle.

The Epididymis.—Early in the last century the infected epididymis was punctured by Vidal and others, not for the evacuation of pus, but for the relief of tension. Incision of the non-fluctuating epididymis and tunica vaginalis was introduced independently by Escat[13] and by Belfield,[14] the latter using the incision to inject vas and vesicle at the same time. The epididymis incision has been advocated by Bazet and by Hagner also. But since non-tuberculous infections reach the epididymis by way of the vesicle and vas, acute suppuration of the epididymis proves existing infection of the vesicle; obviously, then, the latter should be drained and medicated by opening the vas (vasostomy) whenever the suppurating epididymis is incised. To incise the epididymis and neglect the infection persisting in ampulla and vesicle seems scarcely rational.

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[7] Morgan: Ann. Surg., 1902, p. 528.
[8] Young: Ann. Surg., 1903, p. 689.
[9] Belfield: Indiana Med. Jour., November, 1893.
[10] Ries: Medicine, July, 1900.
[11] Fuller: Am. Jour. Urol., December, 1906.
[12] Klotz: New York Med. Jour., Jan. 26, 1895.
[13] Ann. d. mal. d. org. genito-urin., 1903, p. 1664.

The advantages of this procedure over the medical treatment of epididymitis are: (1) shortening the period of pain, fever, swelling and confinement; the patient is ready to resume ordinary avocations in three to five days; (2) avoidance of the usual chronic, tender induration in the tail of the epididymis, which sometimes contains pus and gives rise to recurrent epididymitis. Whether the chance of permanent occlusion of the epididymal canal is increased or diminished by the incision itself remains for larger experience to determine. Moreover, the intelligent use of vaccine therapy distinctly diminishes the frequency and the severity of gonorrheal epididymitis and correspondingly restricts the field of the epididymis incision.

Vasostomy.—Four years ago[14] I published the method of draining and medicating vas, ampulla and vesicle through an incision into the vas (vasostomy) and extending the incision into the epididymis when the latter contains pus. I have now opened the vas 149 times in 107 patients, usually in the office under cocain anesthesia, often without assistance.

By this trivial operation the entire duct—a closed abscess—is relieved of pus tension, vas and vesicle are drained and medicated, the epididymis is protected from infection or, if already infected, from pressure infection, for pus drains through the vas incision from the epididymis also. Medication of the ampulla and vesicle is effective because the injected solution remains in their cavities for days; thus, after injection of the vesicle with argyrol solution, a nocturnal emission two nights later was so black as to frighten the patient into the fear that his future children would be negroes.

Many cases refractory to standard treatment, including "chronic cystitis," "irritable bladders," gleet, admixture of blood with semen, premature ejaculation, recurrent epididymitis, have been promptly relieved.[15] In certain other conditions, notably the pelvic pain due to perivesiculitis, the operation has failed to afford relief. Its utility is measured by the accuracy of diagnosis.

In two cases in which injection of the vesicle was prevented by a stricture of the vas, the occluded portion of the vas was excised and the cut ends anastomosed, restoring the lumen of the canal. In one of these a chronic "neuralgia of the testis," apparently caused by distention of the epididymis with spermatozoa, vanished after the natural exit was restored through this resection.

In the technic of vasostomy three features are important: (1) fixation of the vas, which otherwise may drop into the scrotum and be recaptured with difficulty; (2) raising the vas through the skin-cut for accurate manipulation; (3) exploration of vas for obstruction by sounding with a silkworm thread. Details may obviously be varied at the discretion of the operator. When resection of the vas is performed, a silkworm of catgut thread is passed into the lumen and out through the wall of each cut end and the ends tied above the skin, the thread serving as an axis splint which secures exact apposition of the cut ends of the vas. This method of anastomosis, first published by Mayo,[16] supersedes all other methods of reuniting the divided vas. Incidentally I have observed that after resection of a half inch of the vas the cut ends have reunited spontaneously with a patulous lumen. This is important to remember.[17]

Pelvic abscess in the male, anterior to the rectovesical fascia, is a frequent extension from infected appendices, seminal ducts or lymph-glands; it may open spontaneously into the rectum, sometimes indeed undetected. When recognized, pelvic abscess may be incised from the rectum, provided bulging is felt there; otherwise through the ischiorectal fossa or the triangular ligament (the ischiobulbar triangle). Two years ago I opened a large pelvic abscess, which proceeded from an infected vesicle, through a curved incision beginning in the median line three inches above the symphysis and carried downward and outward above Poupart's ligament. The curved flap was turned upward, the rectus pulled toward the median line and abscess and vesicle reached by blunt dissection; drainage was secured through the perineum. This curved incision exposes also the juxtavesical portion of the ureter, perhaps as well as does Israel's iliac or Gibson's[18] flap incision.

VACCINE TREATMENT OF PUS TUBES

The frequent failure of vaccine therapy against infections of the male genital tract is undeniable; its occasional spectacular success, unknown through other means, is equally indisputable. The successes warrant the suspicion that the failures are not the fault of the principle but of the efforts to apply the principle—in other words of inaccurate treatment.

My own experience has been a steady improvement, from customary failure especially with stock vaccines, to customary benefit especially with autogenous vaccines, against infections of the seminal duct by the tubercle bacillus, gonococcus, staphylococcus, streptococcus and colon bacillus. Against these infections accurate vaccine therapy impresses me as the most valuable of all constitutional aids to local treatment.

SUMMARY

1. Pus infection of the seminal tract plus occlusion of the ejaculatory duct soon converts vesicle, vas and finally epididymis into a closed abscess.
2. Vasostomy is the simplest and least objectionable means of evacuating pus, relieving tension and medicating vas and vesicle.
3. Among the effects of these infections on the urinary organs are bladder iritation and obstruction of the ureter with consequent kidney lesions.
4. Impotence, sterility and sexual neuroses in the male are frequent results of pus infections of the seminal tract and amenable to appropriate treatment thereof.
5. Vaccine therapy, accurately applied, is the most valuable internal measure against the infections which produce pus tubes in the male.

100 State Street.

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[14] Belfield, W. T.: Pus Tubes in the Male and Their Surgical Treatment, THE JOURNAL A. M. A., April 22, 1905, xliv, 1277.

[15] The value of vasostomy in relieving recurrent epididymitis was shown in eleven cases reported to the recent German Urological Congress by Picker (Ztschr. f. Urol., 1909, No. 6).

[16] Mayo: Ann. Surg., January, 1895; this publication has been ignored by certain later writers.

[17] The sterilization by vasectomy of confirmed criminals, imbeciles and other defectives, already performed in Indiana on a thousand convicts, is generally approved wherever the public has been taught by physicians that vasectomy, unlike castration, does not unsex a man, does not impair his sexual power. Its effect is merely that of occlusion from bilateral epididymitis. As these defectives have increased twice as fast as has the total population, this simple method of checking their propagation seems worthy of general attention.

[18] Ann. Surg., 1908, p. 445.

may, therefore, bind and obstruct the adjacent ureter. Morgan[7] found exactly this condition on exploratory operation, and cured the patient by liberating the ureter from its adhesion to the vesicle; and Young[8] later reported a similar case in which adhesions to the vesicle had produced occlusion of the ureter and destruction of the kidney, compelling nephrectomy.

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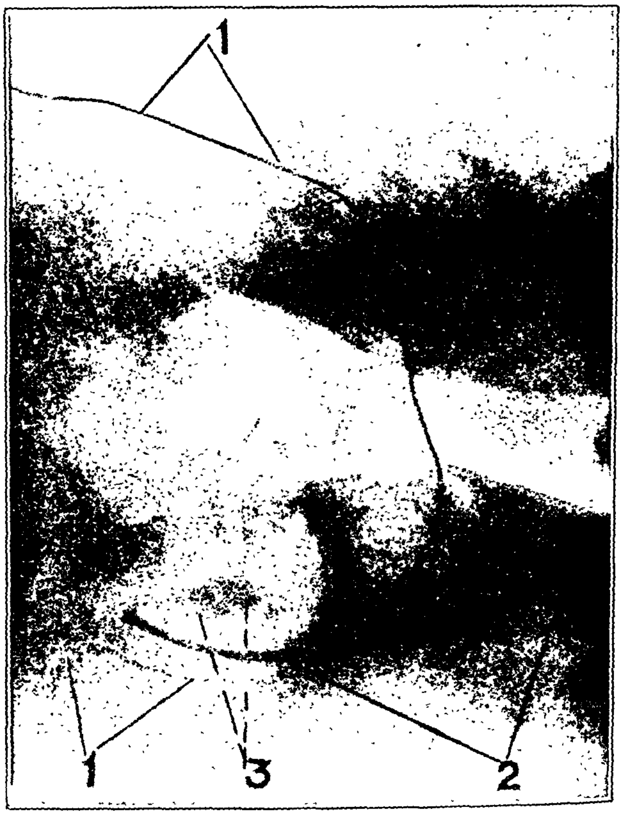

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[10] Ries: Medicine, July, 1900.
[11] Fuller: Am. Jour. Urol., December, 1906.
[12] Klotz: New York Med. Jour., Jan. 26, 1895.
[13] Ann. d. mal. d. org. genito-urin., 1903, p. 1664.

The advantages of this procedure over the medical treatment of epididymitis are: (1) shortening the period of pain, fever, swelling and confinement; the patient is ready to resume ordinary avocations in three to five days; (2) avoidance of the usual chronic, tender induration in the tail of the epididymis, which sometimes contains pus and gives rise to recurrent epididymitis. Whether the chance of permanent occlusion of the epididymal canal is increased or diminished by the incision itself remains for larger experience to determine. Moreover, the intelligent use of vaccine therapy distinctly diminishes the frequency and the severity of gonorrheal epididymitis and correspondingly restricts the field of the epididymis incision.

Vasostomy.—Four years ago[14] I published the method of draining and medicating vas, ampulla and vesicle through an incision into the vas (vasostomy) and extending the incision into the epididymis when the latter contains pus. I have now opened the vas 149 times in 107 patients, usually in the office under cocain anesthesia, often without assistance.

By this trivial operation the entire duct—a closed abscess—is relieved of pus tension, vas and vesicle are drained and medicated, the epididymis is protected from infection or, if already infected, from pressure infection, for pus drains through the vas incision from the epididymis also. Medication of the ampulla and vesicle is effective because the injected solution remains in their cavities for days; thus, after injection of the vesicle with argyrol solution, a nocturnal emission two nights later was so black as to frighten the patient into the fear that his future children would be negroes.

Many cases refractory to standard treatment, including "chronic cystitis," "irritable bladders," gleet, admixture of blood with semen, premature ejaculation, recurrent epididymitis, have been promptly relieved.[15] In certain other conditions, notably the pelvic pain due to perivesiculitis, the operation has failed to afford relief. Its utility is measured by the accuracy of diagnosis.

In two cases in which injection of the vesicle was prevented by a stricture of the vas, the occluded portion of the vas was excised and the cut ends anastomosed, restoring the lumen of the canal. In one of these a chronic "neuralgia of the testis," apparently caused by distention of the epididymis with spermatozoa, vanished after the natural exit was restored through this resection.

In the technic of vasostomy three features are important: (1) fixation of the vas, which otherwise may drop into the scrotum and be recaptured with difficulty; (2) raising the vas through the skin-cut for accurate manipulation; (3) exploration of vas for obstruction by sounding with a silkworm thread. Details may obviously be varied at the discretion of the operator. When resection of the vas is performed, a silkworm of catgut thread is passed into the lumen and out through the wall of each cut end and the ends tied above the skin, the thread serving as an axis splint which secures exact apposition of the cut ends of the vas. This method of anastomosis, first published by Mayo,[16] supersedes all other methods of reuniting the divided vas. Incidentally I have observed that after resection of a half inch of the vas the cut ends have reunited spontaneously with a patulous lumen. This is important to remember.[17]

Pelvic abscess in the male, anterior to the rectovesical fascia, is a frequent extension from infected appendices, seminal ducts or lymph-glands; it may open spontaneously into the rectum, sometimes indeed undetected. When recognized, pelvic abscess may be incised from the rectum, provided bulging is felt there; otherwise through the ischiorectal fossa or the triangular ligament (the ischiobulbar triangle). Two years ago I opened a large pelvic abscess, which proceeded from an infected vesicle, through a curved incision beginning in the median line three inches above the symphysis and carried downward and outward above Poupart's ligament. The curved flap was turned upward, the rectus pulled toward the median line and abscess and vesicle reached by blunt dissection; drainage was secured through the perineum. This curved incision exposes also the juxtavesical portion of the ureter, perhaps as well as does Israel's iliac or Gibson's[18] flap incision.

VACCINE TREATMENT OF PUS TUBES

The frequent failure of vaccine therapy against infections of the male genital tract is undeniable; its occasional spectacular success, unknown through other means, is equally indisputable. The successes warrant the suspicion that the failures are not the fault of the principle but of the efforts to apply the principle—in other words, of inaccurate treatment.

My own experience has been a steady improvement, from customary failure especially with stock vaccines, to customary benefit especially with autogenous vaccines, against infections of the seminal duct by the tubercle bacillus, gonococcus, staphylococcus, streptococcus and colon bacillus. Against these infections accurate vaccine therapy impresses me as the most valuable of all constitutional aids to local treatment.

SUMMARY

1. Pus infection of the seminal tract plus occlusion of the ejaculatory duct soon converts vesicle, vas and finally epididymis into a closed abscess.
2. Vasostomy is the simplest and least objectionable means of evacuating pus, relieving tension and medicating vas and vesicle.
3. Among the effects of these infections on the urinary organs are bladder iritation and obstruction of the ureter with consequent kidney lesions.
4. Impotence, sterility and sexual neuroses in the male are frequent results of pus infections of the seminal tract and amenable to appropriate treatment thereof.
5. Vaccine therapy, accurately applied, is the most valuable internal measure against the infections which produce pus tubes in the male.

100 State Street.

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[14] Belfield, W. T.: Pus Tubes in the Male and Their Surgical Treatment, The Journal A. M. A., April 22, 1905, xliv, 1277.

[15] The value of vasostomy in relieving recurrent epididymitis was shown in eleven cases reported to the recent German Urological Congress by Picker (Ztschr. f. Urol., 1909, No. 6).

[16] Mayo: Ann. Surg., January, 1895; this publication has been ignored by certain later writers.

[17] The sterilization by vasectomy of confirmed criminals, imbeciles and other defectives, already performed in Indiana on a thousand convicts, is generally approved wherever the public has been taught by physicians that vasectomy, unlike castration, does not unsex a man, does not impair his sexual power. Its effect is merely that of occlusion *from* bilateral epididymitis. As these defectives have increased twice as fast as has the total population, this simple method of checking their propagation seems worthy of general attention.

[18] Ann. Surg., 1908, p. 445.

TRUE TIC DOULOUREUX OF THE SENSORY FILAMENTS OF THE FACIAL NERVE

I. CLINICAL REPORT OF A CASE IN WHICH CURE WAS EFFECTED BY PHYSIOLOGIC EXTIRPATION OF THE GENICULATE GANGLION *

L. PIERCE CLARK, M.D.

II. REPORT OF SURGICAL TREATMENT

ALFRED S. TAYLOR, M.D.
NEW YORK

I. CLINICAL REPORT AND REMARKS BY DR. CLARK

It has been fairly well proved by recent investigation that the facial nerve, like the trifacial, is a mixed nerve. Its sensory ganglion is the geniculate. The motor root of the geniculate is the facialis proper, and its sensory root is the nerve of Wrisberg. Below the ganglion the peripheral divisions are the facialis proper, the greater and lesser superficial petrosal, external petrosal and chorda tympani. This ganglion is of the spinal type, consequently liable to inflammations, as herpes zoster, and degenerations, as in tic douloureux. The zoster zone of the geniculate lies just in the interior of the auricle and external canal. This zone is interposed between the zone for the Gasserian in front and the cervical behind. In either zoster or neuralgias we may have one or all three zones affected at once. There is also a considerable degree of overlapping in these three zonal areas, so that a diagnosis of a definite lesion of one zone is often a clinical nicety not easily attainable. Varying clinical syndromes of inflammation and degeneration of these zonal areas have already been described in literature (Hunt).

More accurate studies in the anatomic areas involved in the otalgias will probably show that not a few of these neuralgic disorders are derived from disease of the sensory fibers of the facialis, either in the roots or ganglion, or both. Indeed, it is logical to think of the geniculate sensory system and its disorders as analogous to those of the Gasserian of the trifacialis. What the geniculate system may lack in clinical importance in its smallness of peripheral distribution may be compensated for by the complexity of its ramifications and associations with adjacent sensory systems.

No doubt the complexity of the sensory system in and about the ear is largely responsible for the bewildering array of reflex and idiopathic otalgias. Text-book descriptions of the otalgias are but repetitions of our earlier knowledge of trigeminal neuralgias. Our modern understanding of the latter but points the way in which the idiopathic otalgias must be studied and analyzed. While the reflex causation of the idiopathic otalgias probably has a somewhat better basis in actual material than have facial neuralgias, one cannot help being impressed with the idea that carious teeth have been overcharged with responsibility, and that dental obsessions are as keenly in evidence here as eyestrains and the like defects in the visual apparatus for trigeminal neuralgias. The apparently quick relief of idiopathic otalgias by tampering with the teeth, throat or nose may be explained by the more or less certain self-limiting course of acute posterior poliomyelitis. In other words, the evidence of cure of idiopathic otalgias by various operative procedures in the throat, mouth or nose is no better than that of cure by similar operations on the eyes or nose in idiopathic facial neuralgias. Many otologists do not hesitate to say that what we now know to be a genuine posterior poliomyelitis shown in classic herpes zoster is due to irritation of a carious tooth. There can be no doubt that a reflex cause for idiopathic otalgias may be, and indeed is, found in disease of the teeth, throat and nose, but that these peripheral sources have been overestimated there can be no doubt.

The difficulty of disentangling that form of idiopathic neuralgia of geniculate ganglion disease which immediately concerns our purpose is at present due to a separation of that otalgia which is confined to the anterior wall of the external auditory meatus and the skin just in front of the ear. As is well known, this area is supplied by the auriculotemporal branch of the trifacial as well as the sensory filaments of the geniculate ganglion. More rarely it is supplied by the second branch of the trifacial. The absence of tenderness and pain in the other divisions of the first branch of the trifacialis should exclude this sensory system from involvement. This is not always easy to determine when, as often happens, there is reflex involvement in the trifacial. Usually, however, the reflex disturbance in the trifacial, as well as that in the cervical nerves, can be eliminated by appropriate antineuralgic treatment. There is no reason to think that the prognosis or treatment of idiopathic otalgia of the geniculate system should be different from that of the trifacial. Once the diagnosis is made and the usual antineuralgic remedies have been tried, operative interference is indicated. There is but one procedure practicable—that of physiologic extirpation of the geniculate ganglion, a division of the posterior root of the ganglion, the nerve of Wrisberg.

I will give in brief the history of a case of tic douloureux of the sensory filaments of the facialis and its outcome as follows:

Patient.—Mrs. E. T., aged 28. Aside from the history of morphinism, contracted since the neuralgia began, the family and personal history previous to present illness are negative.

Present Illness.—In February, 1907, the patient experienced paroxysmal, intermittent pain without known cause, just in front of the left ear. The pain occurred for half an hour almost weekly. Two months afterward the pain in front of the ear was of daily occurrence of a typical neuralgic character, sometimes lasting for two and three hours. In the following October, eight months after the onset, the pain had increased constantly so that there was not only a stabbing pain in front of the ear, but also a steady pain in the depths of the ear, on the anterior wall of the external meatus. At times there was a moderate degree of neuralgic pain in all three distributions of the trifacial and in the occipital region. The latter distribution of pain in the trifacial and occipitocervical nerves decreased in five or six months, was intermittently present during the following year, but was never so severe as in front of the ear and in the anterior wall of the external meatus. The patient was taking about twelve grains of morphin daily when I first saw her. Hygienic and electrical treatment very soon removed all the neuralgic pain except that in the region of the ear. All ear, eye and throat and general medical examinations proving negative, the conclusion was unavoidable that the lesion was a true tic douloureux of the geniculate system of the facial nerve, and that the proper remedy was a physiologic extirpation of the ganglion, which I recommended. Later I learned that Dr. Starr had practically come to the same conclusion and recommendation.

The operation was performed at the New York Hospital by Dr. Taylor, April 23, 1909. Dr. Taylor will give the details concerning the operation which he performed.

Postoperative History.—Immediately after the operation all pain ceased. The patient had some ataxia, cerebellar in type, which steadily improved. The hearing, slightly impaired at first, owing to slight damage of the acoustic, was reported normal by an otologist one week after operation. The division of the facialis has given us a complete peripheral palsy which we trust will undergo spontaneous recovery in time; if not, a faciohypoglossal anastomosis may be undertaken. A slight redness of the external auditory meatus at the junction of the anterior wall with the tympanum, observable before operation, has since disappeared. All sensory examinations of the face and external ear proved negative three days after operation. The former area of pain seemed to the patient to be a little less sensitive in the tests. Since the operation patient has reduced her morphin from twenty-five grains to about six or eight grains daily. A steady withdrawal is in progress.

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* Read at the Thirty-fifth Annual Meeting of the American Neurological Association, May 27-29, 1909.

To summarize: We have here a true tic douloureux of the sensory filaments of the facial nerve, apparently cured by a physiological extirpation of the geniculate ganglion.

Note.—Oct. 10, 1909: Examination of the patient to-day, a little more than five months since the operation, shows the following: The patient has had no pain in the ear; hearing is nearly, if not, quite normal and the conjunctival dryness on account of the facial palsy is much less troublesome. The normal muscle tone of the paralyzed face is present and slight but distinct voluntary contraction in the face is observable at the superior and inferior angle of the mouth and in the zygomatici and buccinator muscles. The electrical reactions have improved. Reaction of degeneration is no longer present and faradic response is obtainable in the before-mentioned muscles that show voluntary power about the mouth. The cerebellar ataxia is no longer present.—L. P. C.

II. REPORT OF SURGICAL TREATMENT BY DR. TAYLOR

This case was referred to me by Dr. Clark with the request that the geniculate ganglion itself be removed. A brief study on the cadaver showed that the ganglion could be removed, but that, from its close anatomic relations with the cochlea, the semicircular canals, the carotid artery and the motor trunk of the facial nerve, irreparable damage would probably be done to any one or all of these structures.

After reading the very convincing exposition of Dr. J. Ramsay Hunt, which demonstrates the geniculate ganglion and the "pars intermedia" to be the sensory mechanism of the seventh cranial nerve, the idea suggested itself to me that the sensory root might be divided in the posterior fossa of the skull. Numerous trials on the cadaver proved the feasibility of the operation. The technic so developed was then demonstrated to Dr. Clark, who consented to its trial upon his patient.

The patient had been told frankly that the operation was experimental. Her suffering had been such that she was anxious to have it done.

Operation.—On April 23, 1909, operation was done under ether anesthesia administered by Dr. George M. Creevey, whose method worked so admirably as to deserve special mention. Rubber tubes, passed through the nares to the laryngeal entrance, were connected to a single tube which ran to the etherizer, who was thus able to get out of the way of those working at the operative field, while keeping track of his patient by means of the radial pulse.

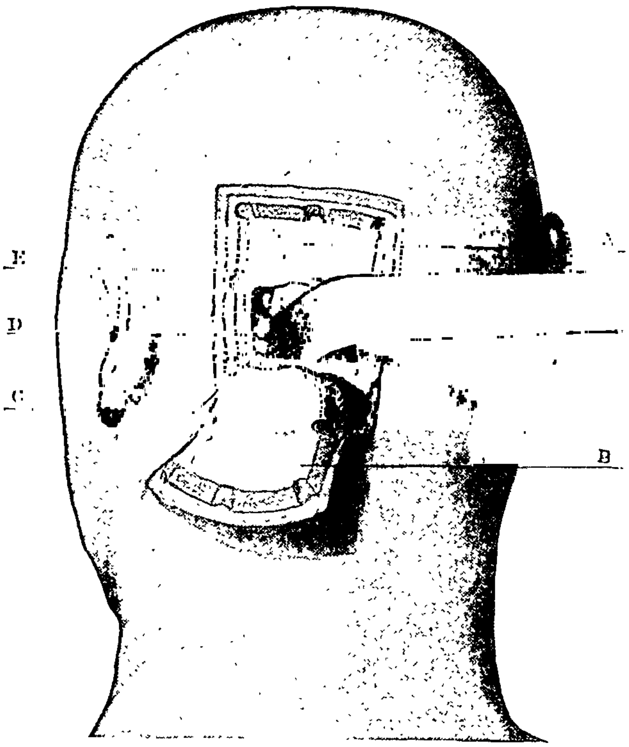
The patient was prone on the table with cushions under the upper part of the chest and shoulders and the head hanging forward so as to give a good exposure of the operative field.

An osteoplastic flap was turned down. Its outer edge was just within the posterior border of the left mastoid, the upper border about 2 cm. above the line of the lateral sinus, and the inner border just to the left of the median line. The lower, or hinge border, was well down toward the foramen magnum. When the flap was turned down the dura was tense everywhere. A dural flap was cut with its base turned toward the median line, its upper edge just below the lateral sinus, its outer and inferior edges just within the corresponding bone edges. The cerebellum protruded at once. A flat blunt retractor was passed to the outer side of the cerebellum to the base of the petrous bone, along which it was gently pushed, retracting the cerebellum, until the cerebrospinal fluid at the base of the brain escaped in considerable quantity with a rush. Immediately the cerebellum retracted easily and the nerve field was exposed. At this time the left shoulder jumped several times and it was found that the end of the retractor was resting against the ninth, tenth and eleventh cranial nerves as they were passing through the posterior lacerated foramen. (Illustration, C.) Just above and to the inner side of these was found the internal auditory meatus with the nerves sought. (Illustration, A.) The seventh, the pars intermedia, and the upper fasciculus of the eighth nerve were cut. The retractor was slowly withdrawn, allowing the cerebellum to return to its proper space. The dura was closed by a continuous catgut suture. The bone flap was laid back in place. The periosteum was sutured with twenty-day chromic catgut. The muscles were sutured with plain gut, and the skin with a continuous silk suture. A small drain passed from the surface of the dura, out through the lower left angle of the wound. Sterile dressings were applied and the patient returned to bed in good condition.

DISCUSSION OF TECHNIC

The flap was made large so that the cerebellum might be retracted easily and without undue compression. It was carried well above the lateral sinus so as to get bone thick enough to bevel and thus to be able to lay the flap back without bone sutures and without danger of its pressing on the brain. The inferior portion of the occipital bone is quite thin.

The bone flap was cut by the Hartley-Kenyon motor saw, which worked to perfection. The upper border and a part of the two sides were beveled so that the flap could be laid back without bone suture and still maintain its position perfectly. The dura was absolutely uninjured during the cutting and lifting of the flap.



Operation for the relief of true tic douloureux of the sensory filaments of the facial nerve. A, seventh cranial nerve, pars intermedia, fasciculi of the eighth cranial nerve (from above downward); B, osteoplastic flap; C, ninth, tenth and eleventh cranial nerves (from above downward); D, artery entering internal auditory meatus; E, lateral sinus just above the dural opening.

After the dural flap was made and the cerebellum retracted two things were found very useful; a suction apparatus working on the principle of the Sprengel pump which kept the field free from cerebrospinal fluid and blood; and a small cystoscopic bulb-light on a flexible stem, so that the light could be placed right in the operative field.

When the internal auditory meatus was exposed the nerves were seen entering it with an artery of moderate size. This artery was carefully retracted as it would have been rather troublesome to tie in a wound of such depth.

The seventh, the pars intermedia, and the upper fasciculus of the eighth cranial nerve were divided with a scalpel. The result was a complete left facial palsy, some temporary disturbance of hearing, and complete disappearance of the characteristic pain. This wide division was made for the following reasons:

It is known that, while most of them run in the pars intermedia, some of the sensory fibers may run with the facial or the upper part of the auditory nerve or both.

The very severe pain had rendered life a burden and had caused a morphin habit of twelve to fifteen grains a day which gave only partial relief. The patient was willing to have anything done that would relieve the pain.

This was the first operation of the kind ever done and it was absolutely essential to be sure that no sensory fibers remained.

To relieve the pain it would have been justifiable to divide every nerve entering the internal auditory meatus.

One of the very important features of the operation is the relation of the line of section to the trophic centers of the nerves involved. The motor portion of the nerve was divided between its trophic center and the periphery, and inasmuch as the ends lie right together, spontaneous regeneration with the return of power in the face may be expected. On the other hand, the pars intermedia was divided between its trophic center (geniculate ganglion) and the brain, so that an ascending degeneration of its fibers will occur; there will be no regeneration and the relief of pain will be permanent.

POSTOPERATIVE HISTORY

Facial paralysis of the left side was present on the operating-table and has persisted. On May 31 (five weeks and four days after operation) the asymmetry was distinctly less noticeable.

Wound Healing.—The sutures were removed on the fifth day, the drainage at the lower angle was discarded, the bone flap was in position, and the wound healed entirely by primary union. The head, which was shaved to a point only 3 cm. above the line of the lateral sinus, can now be entirely covered by dressing the remaining hair properly, so that the patient is not rendered conspicuous.

Pain.—There was considerable pain diffused over the entire left side of the head, but it was most marked in the region of the bone-flap, and, in and behind the left eyeball, there was severe stinging pain. After ten days these pains began to diminish and by the eighteenth day had all but disappeared. On the twelfth day the patient sat up in a chair forty-five minutes. That evening for two hours she suffered severe pain in the left ear which closely resembled the pains before operation. With that single exception she has never for a moment had anything resembling the old pain. Before operation the external auditory canal was very sensitive to touch. On the sixth day after operation she discovered that the finger introduced into the canal caused no discomfort, for the first time in many months.

Hearing.—For the first four days the left ear seemed to be absolutely deaf. From that time on hearing returned, and at the end of ten days seemed normal.

Vision.—Besides pain in the left eye, the patient complained of haziness in its vision. Examination developed nothing abnormal, so that it was attributed to the dryness of the conjunctiva due to the paralysis of the lids. Instillation of liquid petrolatum gave much relief.

Vomiting.—For many months the patient had been subject to vomiting attacks, especially after attempts to cut down the morphin allowance. After operation this tendency was aggravated and most troublesome. For six days after operation any attempt to turn on the left side or to turn the head to the left suddenly was followed by immediate vomiting. This symptom gradually disappeared. Ordinary vomiting has occurred at irregular but frequent intervals. She has gained ten pounds since leaving the hospital (May 13 to 28).

Morphin.—For the first five days the patient received about twenty-four grains in the twenty-four hours. From that time on it was much diminished, reaching a six-grain limit for the twenty-four hours at the time of leaving the hospital, which was the twentieth day after operation.

Miscellaneous.—On the fourth day the patient first mentioned a sensation as of flies or bees buzzing in the hair just above the left ear, and of a pricking sensation in the scalp of the same region. On May 2 (ninth day) these sensations had entirely disappeared. On attempting to walk (from the sixteenth day on) she complained of weak knees. She really has an ataxia of the lower extremities at irregular intervals.

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THE TRANSPERITONEAL OPERATION FOR REMOVAL OF BLADDER NEOPLASMS *

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The first case of intraperitoneal cystotomy was reported by Dr. Francis B. Harrington[1] in 1893. In this instance the operation was performed for ulcerative cystitis.

At this time cystotomy by any route was undertaken only in cases of extreme gravity. The mortality from suprapubic operations, operations through the perineum or urethra was not low; therefore, this apparently more serious procedure was not adopted by any great number of operators, and nothing more appeared in the literature concerning it until about a year ago, when Dr. C H. Mayo[2] reported five cases of transperitoneal removal of tumors of the bladder which were operated on in St. Mary's Hospital. A few months later Drs. Charles Scudder and Lincoln Davis[3] reported four cases in which bladder tumors were removed through an intraperitoneal cystotomy.

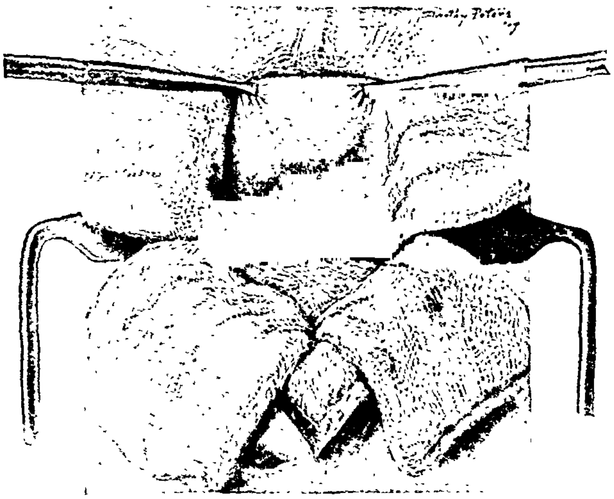

Fig. 1.—Bladder held up into abdominal wound which is spread open with Simpson retractors. Intestines, omentum and abdominal wound thoroughly protected with gauze pads.

One of the greatest difficulties with which earlier workers with lesions of the bladder had to contend was the diagnosis. This obstacle, however, was overcome more than twenty years ago by the invention of the cystoscope, and now in nearly every case a pathologic diagnosis can be made by first removing a specimen of the tumor with the cystoscope. By the aid of this instrument we not only learn the exact nature of the tumor, but we also learn its exact location and extent within the bladder.

Up to the present time the majority of reported cases of tumors of the bladder, both as regards operative mortality and early recurrences, have been very discouraging and some surgeons prefer not to operate in these cases except to relieve temporarily the symptoms of extreme pain or hemorrhage.

In December, 1905, Dr. Francis S. Watson[4] published a study of 653 cases. Combining operative deaths and recurrences under one heading, he found that failures occurred in 28.6 per cent. in benign cases and 46 per cent. in cases of carcinoma.

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* Read in the Section on Surgery of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Harrington, F. B.: The Feasibility of Intraperitoneal Cystotomy with Report of a Case, Ann. Surg., 1893, xviii, 408.

[2] Mayo, C. H.: Transperitoneal Removal of Tumors of the Bladder, Ann. Surg., July, 1908.

[3] Scudder and Davis: Ann. Surg., December, 1908.

[4] Watson, F. S.: Ann. Surg., December, 1905.

Delay in the diagnosis exposes the patient to the danger of an inoperable condition. Dr. Hugh Cabot[5] places the responsibility of such delay on the general practitioner who usually sees the patient first. He warns the practitioner against ever allowing a painless hematuria, which in the majority of instances is the first symptom, to go on while awaiting developments, because it is generally admitted that every papilloma, if not malignant in the beginning, will in time become malignant.

The greater bulk of tumors of the bladder with which we have to deal is made up of the papilloma and carcinoma types. Occasionally a myoma, myxoma, adenoma or angioma is seen, and not infrequently we see sarcoma in children.

During recent years there has been considerable discussion as to whether the papilloma is a benign or a malignant neoplasm. Some pathologists have concluded that the cells in the base of the pedicle are carcinoma cells, while others believe the tumors to be truly benign.

Although we seldom, if ever, see a recurrence at the site of the papillary tumor, it is common to encounter a return of the growth in some other section of the bladder. This may be accounted for by grafting on the mucous membrane from the first tumor, by extension through the submucosa, or by multiple lesions to begin with. From the standpoint of the patient, these tumors are certainly malignant and if not removed will cause death from persistent bleeding and extension. In a few instances, in fact in two of our cases at St. Mary's Hospital, an implantation of the cells occurred in the suprapubic wound through which the tumor had been removed, and a large and inoperable, rapidly growing, malignant tumor sprang up at this point.

Knowing that recurrences are nearly always local, and that extension to the glands and metastasis to other organs is very late, when the conditions do occur, and also that one of our greatest difficulties in handling a tumor of the base of the bladder, where over 90 per cent. of the lesions begin, is the inability to get a good exposure through a suprapubic or perineal incision, we determined to try to better former discouraging results by incising the bladder so as to get a good exposure of any part, and doing a more technical and radical operation. The first step is to make the incision into the bladder through its posterior wall near the base, in this way rendering all parts accessible. After closing the suprapubic incision in the bladder we have occasionally had the wound open and the urine drain for some time through this opening, but in no instance have we had leakage from the incision through the peritoneal surface, which is no doubt owing to the firmer and more rapid healing of the peritoneum itself.

Carcinoma with thick indurated base and open ulcer involving the entire thickness of the wall occurs less frequently in the bladder, but the only treatment that offers any permanent relief in either such conditions is a radical removal. The expert cystoscopist tells us the exact size and nature of the growth, also the position and extent of bladder involvement, and it is our endeavor to develop a method of approach and radical removal of the tumor. We must also develop a technic for caring for the injured bladder wall so that we may expect at least as good results as we are now obtaining in cases of similar neoplasms in other organs.

Previously our chief route of attack has been the suprapubic, and this does well in case the lesion is in the dome or superior anterior wall; the majority of these tumors, however, occur either in the base or lateral wall near the ureteral meatus.

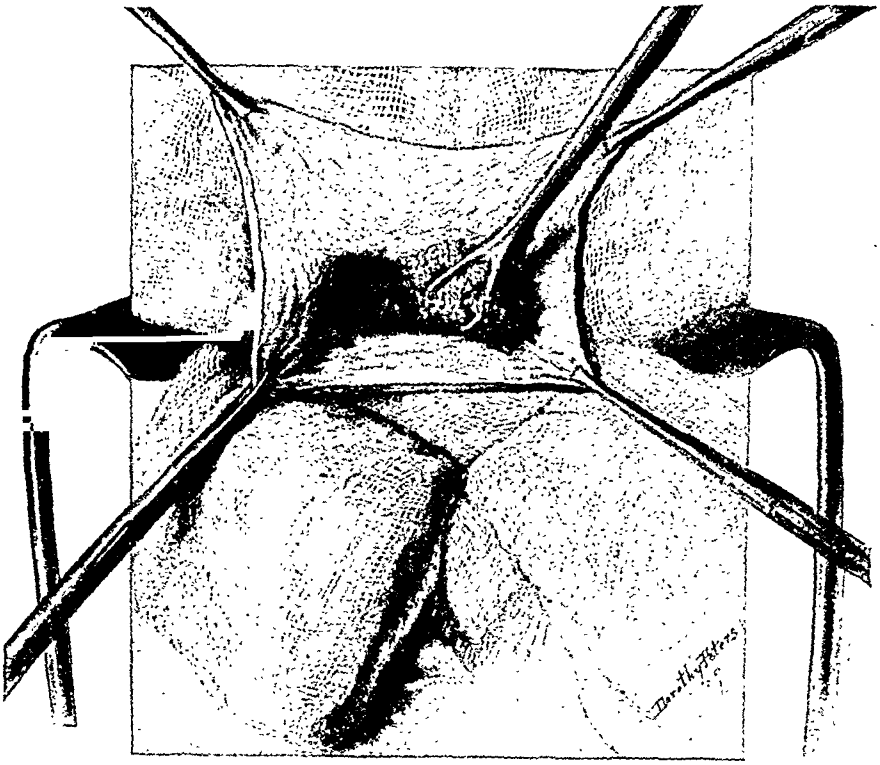

Fig. 2.—Tumor of base of bladder near right ureteral orifice. Incision held open by tacking forceps.

Profiting by the knowledge that the bladder has been accidentally opened many times during abdominal operations, and that the kidneys and ureters have often been exposed through a peritoneal incision without serious consequences to the peritoneum, we determined to open the peritoneal cavity deliberately and pack off the intestines and omentum, preparing this area of the peritoneal cavity for resection in the bladder, in a manner similar to that for resection of any organ.

The patient is placed in the high Trendelenburg position, and on opening the abdomen an opportunity is afforded for exploring the liver, pelvic peritoneum and lymphatics. Although we have never seen an extensive involvement of the lymphatics, in one case a metastasis had already occurred in the liver, and in another case the pelvic peritoneum was involved so that an intravesical operation would have been useless and harmful.

The intestines and omentum are packed into the upper abdomen with several large gauze pads, the packing covering the abdominal wound. The posterior bladder wall is grasped with tenaculum forceps, one on either side of the median line, and the bladder lifted into the abdominal incision. A longitudinal incision is made in the posterior wall of the bladder, beginning on its peritoneal surface in the midline and extending well back to the base of the bladder. The urine is sponged from the bladder as soon as it is opened. This should be done carefully so as not to start a troublesome oozing. If the tumor is on a pedicle, this may be grasped by a pair of curved hemostats and excised with a cautery, leaving the cauterized surface to granulate. The area removed should include a portion of the healthy mucosa and submucosa. When the tumor has an indurated base it will be necessary to excise a portion of all the coats. At times as much as one-half the bladder must be removed. It is essential to preserve as much as possible of the healthy tissue about the urethral orifice. If the bladder is involved at the ureteral opening, after the diseased portion of the viscus is removed, the ureter is divided near the bladder and drawn into the abdomen through a perforation in the peritoneum close to the remaining half of the bladder, into which it is passed and attached with catgut sutures. The peritoneum is closed over the exposed ureter in a fold, to insure rapid healing. The remainder of the bladder is closed, and, though greatly reduced in size, will be serviceable, and its capacity will tend to increase (Harris).[6]

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[5] Cabot: New York Med. Jour., June, 1907.

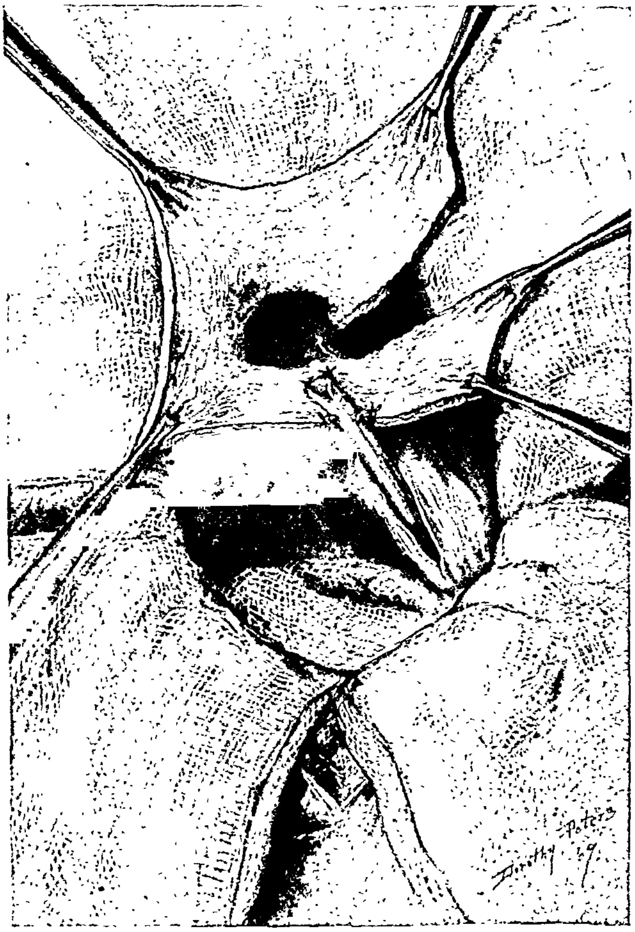

Fig. 3.—Bladder after excision of tumor including parts of bladder wall and right ureter. Ureter pulled through opening in peritoneum some distance from bladder and transplanted within the bladder wall.

Having completed the intravesical part of the operation, the same technic is employed in closing the wound in the bladder as that which would be used in repairing a wound in the *intestines* or stomach. The first row of sutures begins and ends with the knot inside. These are of chromic catgut placed as a running mattress or Connell stitch, including all the coats. The mucous edges are turned in, not only making an air-tight and water tight closure, but also controlling all bleeding from the edges. This suture line is re-enforced by a linen stitch, including the peritoneum, put in parallel to the previous suture line.

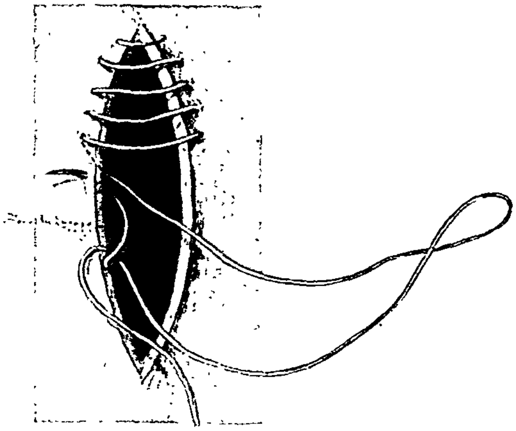

Fig. 4.—Method of closing bladder wound.

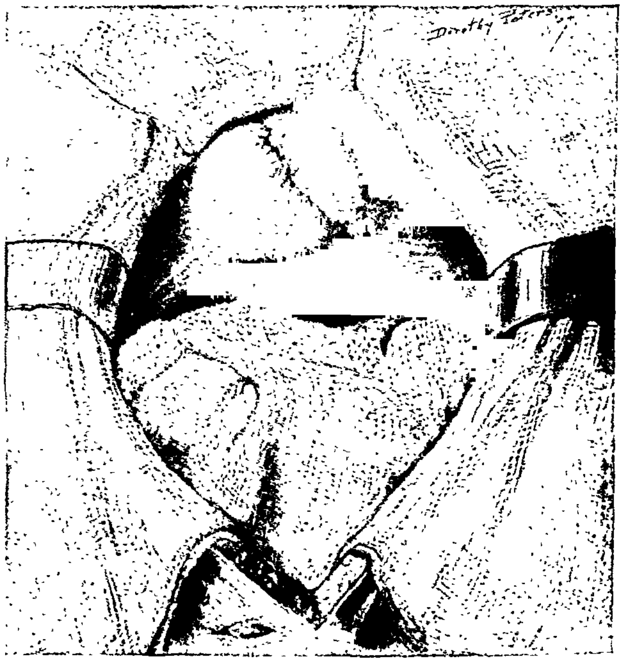

Fig. 5.—Operation finished. Entire incision and ureter closed over with peritoneum.

It is not necessary to drain the peritoneum or the bladder unless the growth involves the ureteral opening, or unless the prostate is removed, when it is best to establish an independent drainage through the space of Retzius after the bladder has been closed. As a rule, these patients void their urine frequently the first few days and are more comfortable without a catheter, though if spasmodic contraction persists in the bladder patients will be made more comfortable by small washings of warm boric acid solution to rid them of clots.

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[6] Harris: Ann. Surg., July, 1902.

Employing this plan of procedure and technic, we have now operated in fifteen cases of tumors of the bladder with one death. In this case the patient was a man, 71 years of age, in whom the carcinoma involved nearly one-half of the bladder, including the left ureteral meatus. One-half of the bladder and the lower end of the ureter, which was greatly dilated, were removed. The excision included all the coats of the bladder wall. The end of the ureter was sutured into the remaining half of the bladder, and the bladder closed entirely. The patient voided urine freely and without aid for the first few days; then the amount gradually diminished, he became uremic and died at the end of the first week. There had been no leakage from the suture line or transplanted ureter, and the peritoneum was clean. The left kidney showed an old hydronephrosis with destruction of almost the entire parenchyma, and the right kidney was swollen and congested from an acute nephritis.

One patient, who had slight involvement of the pelvic peritoneum at the time of operation, died in three months of a recurrence in the peritoneum.

Six patients have lived over one year with no evidence of a return of the trouble. All except two of these patients (one complaining of frequency and one having a stricture which necessitated secondary operation) have been comfortable and apparently well.

One patient has been well ten months, one nine months, one five months and one one month. In this last case nearly one-half of the bladder was removed and the right ureter transplanted into the left half of the bladder. Since one week after operation the patient has passed clear urine. At first he voided very frequently, but the intervals gradually increased, and at the end of one month he averaged one or two times each night.

One patient with malignant papilloma returned in eighteen months showing a similar tumor in the opposite half of the bladder. This patient was reoperated on, and six months later a cystoscopic examination did not show any evidence of trouble.

One case of a large malignant papilloma in the left wall above the ureteral opening, ten months later showed no evidence of return in the old site, but there were many small pedunculated tumors growing from the margin of the urethral meatus. These were removed and the bases cauterized. The patient has been free from symptoms for four months. We were unable to trace two of the cases.

The size of these tumors varied from a few centimeters in diameter to a tumor in one instance occupying nearly the entire space of the bladder.

Four of the fifteen patients had more than one tumor. In nine the pathologist reported malignant papilloma. These included all the cases of multiple growths.

In three of the cases the pathologic report was papilloma, probably malignant.

Three cases were of the straight carcinoma type with indurated base involving the deeper coats and having the open ulcer on the mucous membrane surface.

Of the 15 cases, in 12 the trouble originated in some point of the base of the bladder, and in the remaining 3 it began in the lateral wall about one-half inch from one ureteral opening. In three instances the ureteral orifice itself was involved and it was necessary to transplant the ureter.

Although we do not advise or believe it necessary to go through the peritoneum in removing tumors in the upper quadrants of the bladder, our experience would lead us to believe that the greater number of neoplasms of this viscus begins in or near the base, and that we can, with very little if any greater risk to the patient do a much more technical and radical operation through the peritoneal incision.

EXTIRPATION OF THE UNOPENED HYDROCELE *

WILLARD BARTLETT, M.D.
ST. LOUIS

There is nothing new about a radical idea in the treatment of hydrocele of the tunica vaginalis testis; that condition which Virchow mentions as the most perfect example of exudation cyst. Almost fifty years ago Gross wrote on excision: "It is of the greatest antiquity, and was revived by Mr. Douglass, of England, in 1755." Since Gross' time various authors have written more or less concerning so-called radical treatment, but surgeons do not seem to have been actively interested in the matter until 1885, when von Bramann published the suggestion of Professor von Bergmann that the sac be excised. It was first to be opened and then its wall isolated as far as the testicle, or, in Bramann's own words, "bis an den Hoden," showing that a complete extirpation of the sac was not even attempted by the originator of the procedure.

Various authors state that there have been recurrences after even this excellent method, as there have after every other that has been proposed up to date. Hence it is not amiss to advance an idea which goes still further and obviates this possibility by disposing of every particle of excreting surface. This is most easily done with the sac intact; otherwise it is the old story over again; the leaving behind of a portion of cyst wall as in any other part of the body after accidental tearing of the same has occurred during its removal.

The following text-books on general surgery and surgery of the genitourinary tract make no mention of complete excision with the sac unopened: von Bergmann, von Brunns and von Mikulicz, Rose and Carless, Monod and Vanverts, Bryant, Kocher, Tillmanns, Fowler, Cheyne and Burghard, Zuckerkandl, Bickham, "American Text-Book," Gross, Vaughan, Pick, Koenig, Wharton, Keen, Dennis, Brewer, Esmarch and Kowalzig, Wyeth, Stewart, "International Text-Book," Watson and Cunningham, Casper, Bryant and Buck, Waring, Wharton and Curtis, White and Martin.

In addition to this Dr. Rassieur and Dr. Seelig, of St. Louis, have very kindly searched the literature for me, and, to the surprise of us all, found no reference to this very simple and logical idea. It surely must have been used; hence it seems strange that no publication of it can be found.

The technic of the operation is as follows: After turning out the sac in the ordinary manner it is easiest to begin its removal at the spermatic cord; the loose areolar tissue connecting these two structures can readily be separated by blunt dissection, as can the tumor from the testicle everywhere except at its lateral reflections from that organ, where some cutting must be

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* Read in the Section on Surgery of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

done. No fluid need be lost, and one will be surprised *at the ease and quickness with which this dissection can* be accomplished. It must be stated, in passing, that quite a number of small blood vessels will have to be ligated. After the testicle has been replaced metal clips are placed on the wound in the scrotum so closely as to touch one another; they are quickly covered with powder and no dressing applied. The patient is up and about in four days, and the postoperative effects have differed in no wise from those immediately following other methods. I have tried this only on adults and in thin-walled cysts; it was contemplated on one baby, but was not carried out because I could not accurately locate the testicle before the sac was opened, and after that found it impossible to remove the visceral layer of serous membrane, i. e., to do more than the Bergmann operation. Perhaps the method would not be practicable in a very thick-walled tumor in which inflammation or severe injury had played a rôle. Puncture of the testicle is said to occur in emptying the fluid; this, too, could prevent the proper stripping of the surface of this member.

Removal of the unopened sac can truly be termed radical in the same sense as a Halsted or Bassini hernia operation, which removes the sac, as opposed to the Kocher operation, which brings a portion of the sac up through a split in the abdominal wall.

It is a little more difficult and takes a little longer to extirpate a hydrocele completely in the manner indicated, but it seems to guarantee the patient against a recurrence.

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[Editor's Note: The two preceding articles were discussed with that of Dr. Pederson, which, with the discussion, will be published next week.]

ALGID MALARIAL FEVER

WITH REPORT OF CASES *

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AUGUSTA, GA.

The pernicious types of malaria are of absorbing interest because of their diverse clinical features and their high mortality. Complex problems are attractive, and a high death-rate in any disease is apt to stimulate the energies even of the slothful.

Pernicious malaria presents such problems, and their solution deserves the study of our best clinicians, for much more work is required to be done in their fuller elucidation. The term "pernicious malaria," while conveying an impression more or less definite, to the rank and file of the profession, and, therefore, to that extent serving a useful purpose, has none the less impressed me as being indefinite.

Perniciousness is a quality that may characterize any disease, and is doubtless dependent on a number of conditions. One might just as well speak of pernicious scarlet fever, pernicious measles, pernicious smallpox. Instead, however, we speak of malignant scarlatina, black measles, hemorrhagic smallpox.

CLASSIFICATION OF FORMS OF MALARIA

While these *qualifying* adjectives have in the main been inherited, and are not of the highest scientific value, they carry a sort of universal significance, which is, in a measure, understood. In this sense, therefore, certain types of malaria have been described in all languages—at least in all countries in which they occur—as pernicious. I think that the tendency on the part of some clinicians to subdivide minutely this class is as confusing as unnecessary.

For instance, I think one might just as well speak of the diarrheal form of typhoid fever, or of the constipated form of pneumonia, as the diarrheal or dysenteric form of pernicious malaria, as contrasted with the algid form. The simpler the classification of any disease the more effective it is. There is a type of malaria that is always serious and in many instances fatal. To this, for want of a better name, the term pernicious has been given, and is everywhere generally accepted.

From my study of the classifications of others and from my own experience with this type of the disease, I think that a subdivision into the comatose, hemorrhagic and algid varieties is all that is needed either for accuracy or elasticity. I have seen no variety that could not be placed under one of these subdivisions. A multiplication of them is, therefore, not only unnecessary but confusing.

With the term "pernicious" more or less definitely understood, it is interesting to inquire into the causes of pernicious malaria. It is generally conceded that this type is produced by the action of the estivoautumnal variety of the *Plasmodium malariæ*. Why, then, are some of the cases produced by them mild or benignant and others severe or pernicious? Unfortunately, we must depend here on analogy and our knowledge of the life-history of the parasite.

First, we may assume that a great number of the invading parasites, with the toxins secreted by them, is sufficient to bring about the pernicious symptoms. Against this it may be argued that in many fatal cases few parasites have been found. In such cases it may be and probably is true that the parasites have collected in the internal organs.

Second, it may be argued that in the severe cases either the parasites possess an unusual virulence or the resisting power of the individual has been lessened by preceding attacks of this or some other disease, or some vice of constitution.

Third, it may be supposed that the parasites, for reasons unknown to us, tend to accumulate in some portions of the anatomy, interfering with the circulation there and causing greater absorption of their toxins, and that the character of the attack varies according to the point of chief attack.

This is not unknown in the case of other organisms and has been actually shown in this. I refer to what has been described as an apparently unusual stickiness of the organisms and sluggishness of the circulation in the part.

It may be that a part or all of these factors are operative. At any rate they furnish a not unreasonable working hypothesis for the varying clinical pictures as we encounter them. For instance, when the cerebral cortex is invaded through its circulation we have the comatose variety produced. When the basal ganglia and medulla are chiefly attacked we have the algid variety. When a more general (even though in cases less active) invasion occurs we have great corpuscular destruction, and hemorrhagic malaria or blackwater fever results.

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

All the pernicious forms of malaria are interesting, for they cry aloud for further study, but for the present our deliberations shall be limited to the algid type.

THE ALGID TYPE OF PERNICIOUS MALARIA

Algid malaria may be defined as a pernicious type of malaria, caused by the estivoautumnal form of the *Plasmodium malariæ* and characterized by profound prostration, cold and clammy skin, and an unclouded intellect; this latter in strong contrast with the comatose variety.

Geographic Distribution.—It occurs in all tropical and subtropical countries where malaria is found, occurring in Africa, Asia, southern Europe, the southern United States, Central America and South America. In predisposition, in age, sex and race, it does not differ from other forms of malaria. In subtropical countries it occurs chiefly in the late summer or early autumn and in all cases there is either the history or strong presumption that it has been preceded by other attacks of malaria; in other words, that it is a sequel or termination of a more or less chronic malaria, recognized or unrecognized. In all cases it is produced by the tertian and crescentic forms of the *Plasmodium malariæ.*

Pathology.—In cases in which autopsies have been performed, the pathology does not differ in any essential particular from that of other forms of pernicious malaria, with the single exception of hemorrhagic malaria, in which the urine is more or less surcharged with hemoglobin, giving to it its red and darkened color, and also its name, blackwater fever.

Symptomatology.—The symptoms of algid malaria are clear-cut and definite, and from them it gets its name. In some cases a definite malarial history will be elicited; in others the patient may not have been conscious of other malarial paroxysms, but he lives in a malarial section or has recently come from one.

The attack may be preceded by feelings of malaise, loss of strength, weight and appetite. A more or less torpid liver and constipation are also precursors, though more usually choleraic symptoms usher in the attack. The attack is often preceded by a more or less torpid liver and constipation. The immediate attack is ushered in by a chill or a general sense of chilliness and discomfort, in which event the chill is usually neither so decisive nor so long as in the intermittent variety. Following this there is a rise of temperature, which is usually not great; in most cases it is not present, and cases have been recorded in which the temperature remained subnormal.

The tongue is usually dry and coated and thirst is great. With the onset of the paroxysm pronounced nausea, vomiting and diarrhea set in. The general prostration is profound, and, while headache, pains in the back and limbs are usually present, they are not so marked as in many of the more benign varieties.

The facies is that of a patient suffering from cholera. The face wears a pinched look; the eyes are abnormally bright with hollows and circles around them; and, singularly enough, the brain remains abnormally bright even unto the end. The conjunctivæ and skin are often yellow. The skin is cold and clammy and shrivelled and almost constantly bathed in sweat, so that, to the touch, the patient feels as if he did not have any fever. It is this phase of the condition which gives to the disease its name. The mouth and rectal temperature may, however, show an elevation of temperature varying from 99 to 103 F. The pulse is small and thready and toward the end may be imperceptible. There is usually loss of appetite, and great thirst exists. The urine is usually scanty, high-colored and may show albumin and casts, but does not contain hemoglobin. The diagnosis is made from the history, which naturally includes the patient's past history, the presence or absence of cholera in the region and cholera morbus or ptomain poisoning. After all has been said, the diagnosis will necessarily hang on the blood examination or the autopsy; and even these may be misleading, for a patient may develop ptomain poisoning and still have been already infected with severe malarial poisoning. Cases for reasonable doubt, however, are exceptional.

Prognosis.—The prognosis is generally grave. In my experience the mortality has been, I regret to say, 100 per cent.

Treatment.—In all forms of pernicious malaria quinin seems singularly ineffective. I still adhere to the administration of quinin in the type under consideration, believing that it is a matter of the amount given and its subsequent absorption. For this reason I administer it hypodermically. The rest of the treatment is supporting and symptomatic.

REPORT OF CASES

CASE 1.—*History.*—H. D. V., white, aged 57, American, book agent, entered the City Hospital Oct. 13, 1902. His mother died of bilious fever, and one of his children died of malarial fever; otherwise the family history and personal medical history were negative. For about nine days previous to the patient's entrance into the hospital, he had been suffering from more or less nausea, vomiting, and swimming in the head, muscular weakness, and loss of appetite, which he attributed to the eating of some ham, which disagreed with him; following the nausea and vomiting, he developed diarrhea.

Examination.—On admission the patient was found to be a man of medium build, imperfectly nourished and anemic. The pallor of his skin was quite marked, the tongue coated and the conjunctivæ slightly tinged yellow. The lungs were normal, as was also the heart, except for diminished muscular power. The liver was slightly enlarged and the spleen considerably so. The skin was cool and clammy to the touch, being bathed in more or less profuse sweat; so that to feel the patient in any portion of his body, whether head, hands or feet, he seemed to be free from fever, and this continued steadily until the end. The temperature by mouth was 97.06 F.

Course of Disease.—On the next day the temperature rose to 98; then came a sudden drop to 93.06 at which time the patient developed a hiccough which persisted practically without intermission until his death. Nausea and diarrhea were pronounced. Following the drop in temperature there was a rise to 102.04 (by the rectum) although when the internal temperature was this high the surface was blanched, moist to the touch, and cool. Following this rise the temperature dropped to normal, and continued so until the morning of the fourth day. Just before death, the rectal temperature registered 100. The patient's mind continued unnaturally bright until the end. The case presented a picture not unlike that of Asiatic cholera, except for the fact that the stools were not so numerous or profuse. The diagnosis of algid malaria was made from the blood-smear, in which great numbers of estivoautumnal tertian organisms with crescents were found. Treatment was unavailing; at the beginning he was given broken doses of calomel at fifteen minutes' interval until he had received a grain and a half; he was given, hypodermically, ten grains of acid quinin hydrochlorid with urea three times a day, and a supporting treatment, including high salt enemas. Unfortunately, an autopsy was not allowed by the family.

I find a case recorded[1] by Dr. R. H. von Esdorf which presents many points of resemblance to the case just recorded by me, except for the more pronounced choleraic discharges in Dr. von Esdorf's case. Fortunately in that case an autopsy was thoroughly performed and recorded.

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[1] Von Esdorf: Boston. Med. and Surg. Jour., June 18, 1908, clviii, 937.

Case 2 (von Esdorf's).—In brief there was a history of an illness of about six hours; symptoms of cholera, no fever, syncope and death.

Autopsy.—Enlarged liver and spleen; discolored mucous membrane of stomach; discolored mesentery and omentum, section of liver and spleen showed hemozoin in large and small masses, young small ring form of malarial parasites in red blood cells, lymphocytosis; free hemozoin in blood.

In a letter Dr. Rosenau makes this pertinent remark to Dr. von Esdorf, and the deduction seems reasonable: "He surely had an access of pernicious [malaria]. Don't you suppose, however, that he might have been sick on the trip, and that when you saw him he was suffering with the stupor due to the clogging of the capillaries of the brain with malarial pigment and parasites?"

Case 3.—*History.*—Mr. B., aged 60, white, traveling salesman, admitted to City Hospital, Oct. 16, 1902. His previous history was negative. On admission patient had severe bilious vomiting, copious diarrhea, and pains in stomach and intestines.

Examination.—The patient's temperature was 95 F. on admission and remained subnormal until death. The pulse was small and thready; respiration 28 to 40. The skin was cold, moist, clammy. The intellect was clear.

Course of Disease.—The patient was given acid quinin hydrochlorid hypodermically, Fowler's solution and a supporting treatment, but died on the third day. An autopsy could not be obtained.

For the report of the following case I am indebted to my friend, Dr. Murphy:

Case 4.—*History.*—John W., colored, aged 19, laborer in brickyard, was admitted to Lamar Hospital Sept. 26, 1902, in profound collapse.

Examination.—The patient was with a history of having had one chill eight days before admission, when diarrhea and nausea set in after a chill; conscious; his skin was cold and clammy; there was nausea, vomiting of green material, and copious watery diarrhea. The spleen was enlarged; the abdomen retracted; there was marked pallor of mucous membrane. Pulse was 124 to 126; temperature 97.8. Blood examination showed profuse infection with estivoautumnal ring forms, also a few crescentic and ovoid forms.

Course of Disease.—The patient was treated with calomel and magnesium sulphate after washing out stomach, and given acid quinin hydrochlorid gr. xv. hypodermically every three hours for three doses. Remittent fever set in after patient rallied from collapse, but yielded to treatment without any return of algid symptoms after twelve days.

Case 5.—*History.*—Susan Jones, colored, aged 56, laundress, was admitted to Lamar Hospital, August 1900, with history from family of "dysentery," with nausea and vomiting for three days. Coma had set in three hours before admission to hospital.

Examination.—The patient was unconscious on admission. Temperature was 98; pulse 108; respirations 20. Blood examination showed numerous pigmented leucocytes, but no intracellular parasites.

Patient sank into deeper and deeper coma and died nine hours after admission to hospital.

Autopsy.—This showed enlargement of liver two fingers' breadth below costal border, spleen just below costal border, dark red in color; capsule tense, soft in consistency; no changes of importance in other organs; liver and kidneys showed cloudy swelling. Smears from spleen showed enormous quantities of estivoautumnal parasites and pigmented cells, also much free malarial pigment.

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ABSTRACT OF DISCUSSION

Dr. John A. Witherspoon, Nashville, Tenn.: While I do not practice in a malarial section of the country, I see much pernicious malaria in Nashville. The cases described by Dr. Coleman are comparatively rare and seemed to be those that are overwhelmed by the toxemia of malaria. Algid malaria, strictly speaking, is the type of malaria he described; in this type of the disease we find choleraic diarrhea, nausea, vomiting, colic, rice-water vomiting, purging and cholera. Fortunately, these cases are rare. In all malarial countries there are latent malarial cases; the infection invades the blood, especially of the spleen; the peripheral circulation may be examined carefully and no plasmodium found. Yet there is a low grade of infection and occasionally the temperature and chill will repeat themselves. Any man who undertakes to handle latent malaria should remember that it requires four or five months' constant treatment, and even then he may have relapses. One of the greatest mistakes a person may make in the treatment of this disease is to give quinin for two or three weeks and expect to cure the patient. Again, it should be borne in mind that these walking cases of latent malaria cannot be properly cared for while the patient is up and about his business. I have seen but two cases of the type described by Dr. Coleman. The first patient died one hour after I reached the bedside; the other lived thirty-six hours. Both patients were overwhelmed by the toxemia of malaria. The pupils were dilated, the rectal temperature was subnormal, the diarrhea was profuse and emaciation was rapid; yet the intelligence was perfect until the last. It is strange that with such a degree of prostration, with the pulse almost imperceptible at the wrist, the intelligence remained good. These patients rapidly became cyanotic and died in a state of extreme toxemia and exhaustion. It seems to me that the only hope for treatment in the type described by Dr. Coleman is to recognize the fact that the person has come to a malarial portion of the country, has come to an infected district where such severe forms of malaria develop, and that the only hope lies in trying to prevent the disease occurring. After the disease has developed, I believe that the only hope lies in the use of saline irrigations, transfusions and injections. I believe that the deep hypodermic injection of quinin, which gives such beautiful results in other forms of malaria, is absolutely useless here. Our only hope in curing these patients, I believe, rests in the intravenous injections of solutions of quinin. If the solution of quinin is injected into the tissues, into the muscular structures, the quinin will not be taken up by the circulation.

For those who are not used to giving quinin I should like to mention one practical point. I believe that quinin is used in too large doses. From 15 to 20 grains is sufficient in most cases, although I have given as much as 140 grains in three hours. But I insist on giving quinin hypodermically, putting it deep into the tissues. I cannot hope to get such good results by simply putting it under the skin. There will not be any abscess or irritation of the skin and the quinin will be better absorbed. Those men who have condemned the hypodermic method in the treatment of these cases did not use quinin in a proper acid solution and did not insert the needle deeply enough in the tissues. If I get another case of algid malaria I shall introduce the quinin into the veins. Some patients recover because of their strong resisting power, so it is said; but I think if they do recover it is by the grace of God.

Malaria throughout the South is decreasing; the number of cases occurring is growing less and less. Clearing up the swamps in certain districts has lessened materially the number of cases of pernicious malaria. The disease is now practically limited to the swampy districts; it is here that blood becomes contaminated after the individual has been put to sleep by the melodious song of the mosquito.

Dr. James B. McElroy, Memphis, Tenn.: I should like to speak about the classification of pernicious malaria and the treatment of the special form under discussion. The best classification probably is that given by Dr. Coleman, that is, comatose, algid and hemorrhagic. I think, however, that "blackwater fever" should be excluded from the latter. Blackwater fever differs from pernicious malaria in the mode of occurrence, in clinical manifestations and in parasitology. "Blackwater fever" occurs most frequently in old residents in malarial districts; pernicious malaria most frequently in children and newcomers to infected districts. In pernicious malaria, paroxysms occur at regular intervals of rarely less than twenty-four hours, and each paroxysm tends toward death. In hemoglobinuric fever the paroxysms usually come at shorter intervals, and, unless the first paroxysm ends fatally, death is not usually produced by the associated malaria. As a rule, pernicious attacks of malaria are associated with numerous parasites, with a tendency to increase with each succeeding paroxysm. Large phagocytes are also frequently seen. In blackwater fever parasites are few, and frequently absent; they tend to disappear early from the peripheral blood and internal organs as well; large phagocytes are seldom seen. While blackwater fever is most frequently of malarial origin, I do not think it should be regarded as a pernicious attack in the sense in which the comatose, algid and hemorrhagic are. The pernicious hemorrhagic group should be reserved for those pernicious attacks of malaria associated with real hemorrhages. The treatment best adapted for the algid forms is the prompt administration of quinin by hypodermoclysis in normal salt solution. The prognosis is always grave in these; but on several occasions I have seen recovery follow this measure in severe algid attacks.

Dr. Thomas D. Coleman, Augusta, Ga.: I should like to call attention to the fact that in the cases I have reported the duration of the disease was short. In one case the patient died within a few hours after the onset. No case lasted more than four days. The duration was short and, of course, the symptoms were correspondingly severe and pronounced.

I prefer the bimuriate of quinin with urea, from 10 to 15 grains to the dose, repeated as the symptoms require. I think that Dr. McElroy's point on blackwater fever is a good one. I have never approved of the term "blackwater fever."

THE NOTIFICATION TO THE HEALTH AUTHORITIES OF CASES OF ABORTION AND MISCARRIAGE *

MYER SOLIS COHEN, A.B., M.D.
PHILADELPHIA

Physicians are not permitted to disclose any information that they have acquired in attending a patient in their professional capacity and which was necessary to enable them to act in that capacity. Professional secrets belong to the patient and can not be disclosed without the patient's consent. It is but right and proper that information acquired for a specific and humane purpose should be put only to the use for which it was obtained. Many sick and injured persons otherwise would deceive their physician or forego medical attention altogether, especially if guilty of crime.

Exceptions to this rule, however, do exist. Whenever the interests of the people as a whole are paramount, the individual rights of the patient are set aside. In many states, for instance, physicians are required to report to the health authorities all cases of tuberculosis. In others before a marriage license is issued the absence of venereal disease must be certified to. All births must be reported, even when illegitimate, the name and address of the unfortunate mother being given in such cases, and that of the father also, when known. The question, therefore, is not whether the professional secret is inviolable, but under what circumstances it should be disclosed.

So far as I have been able to learn, nowhere is abortion or miscarriage a notifiable condition. Cases that end fatally come to the knowledge of the authorities through the death certificate, which under some laws must mention the fact when death is due directly or indirectly to this cause. A district attorney, however, speaking at a medical meeting, held that self-induced abortion should not be reported, whether the patient lived or died. In cases of criminal abortion some believe that a physician is not permitted to disclose any information he may possess, even on the witness-stand, whether the patient be living or dead. On the other hand, in some states a physician is compellable by law to testify in the witness-box—not voluntarily—what he knows indicating the commission of criminal abortion when the victim of that abortion is dead; but must keep silent when the patient survives and does not waive her privilege. In the latter instance some think that the physician should endeavor to procure the consent of the patient to inform the authorities, even though she survives. Others say that the law forbids only the disclosing of such information as is necessary to enable a physician to treat his patient, which does not include evidence of wrongdoing. It has been maintained, moreover, that a physician summoned to a case of criminal abortion has a duty to fulfil to the community, as well as to his patient. I would add that he also has a duty to himself.

Every physician who attends a case of abortion or miscarriage, whether accidental, self-inflicted, or brought on by another, lays himself open to the charge of having committed a criminal operation, especially if he had been in attendance on the patient previously. Should the woman die, suspicion points to him still more strongly and if a coroner's autopsy shows that a crime has been committed, he is placed in a decidedly awkward position. An innocent physician could easily be made the subject of blackmail.

It has been suggested that in all cases of suspected criminal abortion the general practitioner safeguard himself by calling in as early as possible another independent medical witness. But it is difficult to see how this would remove the suspicion. The consultant would have no personal knowledge as to how the abortion occurred. In fact, an abortionist could then avoid suspicion by merely calling in another physician, who even might be a fellow-criminal. And surely it is no less a breach of professional confidence to make known a patient's condition to a physician who is called in, not to assist in the treatment, but merely to protect the attendant, than to report the case to the health officer, the one who is responsible for the health and the vital statistics of the community.

Compulsory notification might act as a deterrent to the abortionist, as suspicion would naturally fall on those who fail to report their cases or who report a great many.

Undoubtedly vital statistics lack important data when they fail to include the number of abortions, miscarriages, and still-births. Such information is necessary to the study of the problems of fecundity, depopulation and race suicide, matters of the greatest importance to the nation.

Census reports would be more valuable, physicians would be protected, and crime discouraged if the occurrence of abortion or miscarriage were made reportable by law. On the other hand, no breach of professional confidence will occur if the name and address of the patient be not given, the location merely being indicated in a general way. Nevertheless I see no reason why the same procedure should not be followed that obtains when a birth occurs, namely, the reporting of the patient's name and address. This naturally should be regarded as a privileged communication, to be kept secret by the health officer or registrar, unless a good and sufficient reason exists for disclosing it.

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*Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

Should the report contain more than the mere statement of the occurrence of the abortion? It might be advisable for the physician to give his opinion as to the cause, whether accidental or criminal, and in the latter instance whether self-induced or brought on by another. My own opinion is that no details should be given and no suspicions mentioned, unless the patient dies, in which event the attendant should be compelled to communicate all the information in his possession.

Who is the proper official to be notified? The coroner is suggested by most writers. That he should be informed when death ensues goes without saying. But there is a question in my mind whether he should be made acquainted with any cases except those ending fatally. I fail to see why convalescent and uncomplicated, accidental cases should be reported to the coroner, whose duty is to investigate the cause of death. Mere detection of crime properly belongs to the prosecuting attorney of the county. It would appear more fitting to report to this officer when a crime has been committed. But it hardly seems right to notify him in the absence of crime.

In my opinion, physicians should be required to report cases of abortion and miscarriage to the same official to whom they report all other notifiable conditions, namely, the health authorities. The health officer, who usually records the deaths and births and the existence of contagious disease in a community, should also be notified of the premature births, the still-births, the miscarriages and the abortions. He can then inform the coroner or the prosecuting attorney when in his judgment this seems indicated. In those states, however, where births and deaths are reported to a state or district registrar, it might be well to report to him all abortions and miscarriages.

It would, therefore, be well for the Committee on Legislation of this Association to urge the enactment of a law requiring the physician or midwife attending a case of abortion or miscarriage or still-birth to report such case to the proper health authorities or to the registrar, and if there be no attending physician or midwife, requiring the patient or her husband, or the householder or owner of the premises, or the manager or superintendent of a public or private institution in which the abortion or miscarriage occurred, to give such notice. This is the procedure followed in Pennsylvania in regard to infants born alive. Why should it not be applied to every product of conception that passes through the birth canal?

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ABSTRACT OF DISCUSSION

Dr. W. Forrest Dutton, Walker's Mills, Pa.: I regret to say that the bureau of vital statistics, as conducted by the state of Pennsylvania, is one of the greatest farces ever palmed off on an intelligent people. The physician is required, by law, to report all stillborn and other children; yet a midwife (of which there are very few in Pennsylvania licensed) or any other party can report these cases. Within the last few years hundreds of these cases have come to my notice which were never reported; and after the matter was reported to the state authorities they would write a few letters to these parties, and if these were not answered the prosecution was not carried any further. I think it would be a very good thing to have these cases reported; but unless we can get the laws changed and make them more forcible and see that they are carried out, I think it is only farcical and futile to try to attempt to secure any benefit by the registration of vital statistics, especially in Pennsylvania.

Dr. Marshall Langton Price, Baltimore: I should like to correct Dr. Dutton's misapprehension of the state of affairs in Pennsylvania. The registration area of the United States depends on the registration of births. Most of the state registrars have found it difficult enough to secure them in sufficient extent to meet the requirements of the census. There is not one of the seventeen or eighteen registration states that now registers births, with the possible exception of Massachusetts, and if Dr. Dutton were acquainted with the difficulties in the registration of births I think he would not be so severe in his criticisms of the Pennsylvania state authorities.

Dr. W. Forrest Dutton, Walker's Mills, Pa.: I may be a little warped, but, nevertheless, it is an exasperating fact that the state authorities arrest physician after physician who possibly has been so busy that he did not have time to register a case, and fine him from $75 to $100 for each case. It would be a different thing if the authorities were not informed that midwives and others do not report the births of children and were not told exactly where these people are located, yet they do not prosecute them.

Dr. Marshall Langton Price, Baltimore: What is the specific case to which you refer?

Dr. W. Forrest Dutton: The non-reporting of births and of stillborn children.

Dr. Marshall Langton Price, Baltimore: So far as I know, only one prosecution has been brought in the United States for the failure to register births, and that was in the state of Minnesota. I mean one successful prosecution. We have frequently all the evidence complete, and present it to the courts, and the courts fail to convict. Now, so far as I am individually concerned as State Registrar of Maryland, I intend to prosecute in the near future for failure to record births. I cannot promise now, or at any future time, that any of these prosecutions will be sucessful.

Dr. W. Forrest Dutton: Within a few months several physicians about Harrisburg have been prosecuted; but it seems an injustice to the physicians to prosecute them and not to prosecute the midwives. Especially people who take care of their own children should be reported.

Dr. J. N. Hurty, Indianapolis: Did I understand there is no place in the United States where accurate statistics of births are collected?

Dr. Marshall Langton Price: There is no registration area in the United States for the reporting of births except Massachusetts.

Dr. J. N. Hurty, Indianapolis: This is the second year we have collected birth statistics in Indiana. We believe we now secure records of within 2 per cent. of the births. This belief is based on a newspaper test. This test consists in taking all the newspapers published in the state, reading them, recording the births noticed therein and then seeing if the certificates have been received. All birth certificates come to the central office and we have found by this test that we receive 1.9 per cent. The doctors of Indiana are aiding the work splendidly. The Indiana State Medical Society passed a resolution strongly favoring the collection of birth records, and pledging its members to do all they could to make the work accurate. All but two or three county medical societies passed similar resolutions. In this way the profession is behind the work. Our trouble lies principally with the licensed midwives, and several of this class have been fined and their licenses taken away, because of failure to report births. There have been two or three successful prosecutions against physicians who have failed in their duty.

Dr. Marshall Langton Price: I am glad to hear this; because successful prosecution is absolutely essential to the recording of births.

Dr. J. N. Hurty, Indianapolis: While I am on the floor I wish to endorse everything that Dr. Cohen has said in his paper. It is an excellent paper. We should report to the coroner every suspicious death. The law requires this in Indiana.

DR. SENECA EGBERT, Philadelphia: I can, perhaps, explain to Dr. Dutton the reason for the rigidity of the Pennsylvania health authorities at present. If I am not mistaken, a few weeks ago a number (I think about six) of Philadelphia's physicians were reprimanded for failure to report births. This brought in a very large number of birth reports that had not previously been sent in. My recollection is, further, that none of those who were remanded were pushed to the extreme of the law's penalty. They simply were cautioned, and the result of the campaign was achieved, because the delinquent reports came in.

DR. W. M. BRUMBY, Austin, Texas: Our Texas state registrar has not been able to persuade our state and county authorities to follow the census bureau on the blank certificates of births and deaths, and the reports are by no means complete or accurate. I do not think, however, that we have had much trouble in some of our more essential features of vital statistics. I doubt very much the possibility of being able to get our people, or anybody else, to report on miscarriages, as recommended by Dr. Cohen. In a state where we have such a large percentage of ignorant people ushered into the world without any assistance, and out of it in the same way—no one officiating at either occurrence unless some old woman that we never heard of before—it is difficult to get reliable statistics. Our midwives do not take up that occupation until they reach the age of uselessness for all other purposes.

DR. W. H. DONALDSON, Fairfield, Conn.: I cannot allow to go unchallenged the statement regarding registration. Connecticut does not take a second place with Massachusetts, or any other state in the Union, in the matter of vital statistics. Registration of birth certificates, as well as death certificates and marriages, is as complete in Connecticut as in any state in the Union. I believe that we have a very high percentage. Of course, we do not get in every birth certificate; but we have an excellent health officers' law that has been in force for fifteen years, and I believe that there is a very complete registration of births, marriages and deaths. I do not propose to have Massachusetts placed ahead of us. Connecticut was one of the first to adopt registration and now stands well at the head. I could not get the idea of Dr. Cohen's reason for reporting all the cases that he suggests. As a health officer, I take opposite views with him. I do not believe it is possible, until we get nearer the millennium, to get all these cases. We are fighting for the reporting of tuberculosis and the contagious diseases. Now it is suggested that we have malarial diseases, abortions and all sorts of cases reported. We might as well stop specifying and say that all cases that come to our hands shall be reported to the health officers and the coroner. I do not believe that it is possible to secure the enactment of any such law, and the reporting of any such cases, and I doubt very much the benefit to be derived from it.

DR. MARSHALL LANGTON PRICE, Baltimore: It seems to me that the Germans have come nearer to recording birth certificates than any other nation in the world. There is a stub attached to the birth certificate which must by law be returned by the parent. The original certificate must be returned either by the midwife or the physician. If the parent's certificate is received and not the physicians, the authorities generally want to know the reason why, and a fine is very apt to be imposed on the offender. On the other hand, if the physician's certificate is received and not the parent's, the authorities likewise make inquiries, with practically the same result. If we could get out laws up to the German standard and use the double certificate it seems to me that the real solution of the problem would be reached.

DR. HENRY B. HEMENWAY, Evanston, Ill.: I was called many years ago to attend a young lady whom I had always regarded as a model of propriety. She was active in church work, etc.; there was absolutely nothing about her life, as I knew it, to lead to suspicion. The symptoms given were those, more particularly, that might point to typhoid. She stated that she had had her usual menstrual period one week before. She had a temperature of over 102 F.; there was a general abdominal tenderness, and slight tympanitis. In many ways the general symptoms were those of typhoid. I said that the case looked to me suspicious of typhoid. Later, by the merest accident, a note was left where I happened to see it—a note to a legal friend, and from a young man whom I had not the slightest reason to suspect knew this young lady; and the note read something like this: "Dr. Hemenway says my girl is threatened with typhoid. If the truth comes out, what shall I do?" I could read between the lines, and running through all the cases that I had seen I picked out this one case, and the next time I went there I sent the mother out of the room to get something and said to the girl: "You have had an abortion performed." The answer was: "Don't tell mother." Now, that case very likely would have got beyond control before I discovered what the facts were, if it had not been for that note. There was nothing at all in the history as I could get it, or in the examination as I made it, which would point to the actual facts, and if the girl had died under any such circumstances (she might have died very rapidly), it is more than possible that things might have looked very peculiar for me.

DR. MYER SOLIS COHEN, Philadelphia: Some one asked, what is the use of reporting cases of abortion? Three things would be accomplished. The first is the perfection of vital statistics. I saw the statement in a government report that in certain sections of the country the birth-rate is diminishing. In France the question of race suicide is most important. There can be no reliable information on the subject when cases of abortion are not reported. The second is the protection of the physician. The physician is often called to attend a married woman in an abortion, which, so far as he knows, is accidental. It sometimes happens that the abortion is self-induced, or brought on by a professional abortionist. In that case, should the woman die, the physician is placed in a rather awkward position. If he is called to treat a fatal case of peritonitis and it is discovered afterward that the woman had an abortion he will have great difficulty in clearing himself. As a matter of fact, many physicians do report cases of abortion. Some report to the coroner, others to the district attorney. Some report all cases, whether they suspect anything criminal or not, in order that they shall be protected should a fatal termination occur; some report only when they suspect that a crime has been committed; some report only when they think the patient is going to die. The question that I would like answered is: Who should be notified when a physician desires to report a case of abortion? In my opinion, it is the registrar, or health officer, rather than the coroner, or district attorney. The third point was brought out by one of the speakers, namely, the education of the people. People have an idea that a fetus is not a living person and does not amount to anything; that to bring on an abortion is of no consequence at all. If every product of conception were regarded the same, if all women were made to realize that the passage of a product of conception through the birth canal is a birth, and the death of the fetus is a death, to be reported just the same as ordinary births and deaths, they would begin to realize that there is something serious in bringing on abortions, and no doubt the morals and the health and the welfare of the community would be advanced.

THE DEAF CHILD AND THE PHYSICIAN *

JOHN DUTTON WRIGHT

NEW YORK CITY.

I wish to express my appreciation of the breadth of view shown by your Section in placing this paper on its program. It is an excellent example of the broad-minded attitude of your profession toward your work, showing that you feel that your responsibility to your patients does not end at the office door.

During the twenty-one years that I have been engaged in the education of the deaf by the oral system I have always found physicians much interested in the subject. Every child whose hearing is defective is first taken to the family physician, who is usually a general practitioner, and in most cases sooner or later he advises that a specialist be consulted. On these two men rests in large measure the responsibility for the highest welfare of the child. In some cases the best efforts of the best men can not restore to the child a sufficient degree of hearing to enable it to understand ordinary conversation under everyday conditions, and the parents, in their inexperience, naturally look to the intelligent and experienced physician to show them what course must then be followed.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

It is at this point, while medical science continues to do all in its power for the child, that the educator steps in and helps in some measure to overcome the handicap by training the brain, the eye and the imperfect sense of hearing to share in common the increased burden.

We have to deal with three classes of deaf children: (1) those totally deaf, either congenitally or in early infancy, (2) those rendered deaf by accident or illness after speech and some language have been acquired, (3) those partially deaf, but with enough hearing to acquire some speech and language through shouting near the ear.

The first class, those totally deaf from birth or early infancy, must be taught language and speech without the aid of the ear. The other two classes must have their speech preserved and improved by careful instruction. All three classes must be educated and taught to understand the speech of others, either by the sense of sight alone or with the combined assistance of eye and ear.

This is neither the time nor the place to enter into any discussion of the general problems of the education of the deaf. They differ from the ordinary problems of education because the ear is not only the teacher of speech, but it is also the channel through which we get much of our language and the mental development which can alone be attained through language. The general public does not appreciate the greatness of the task of teaching language to a deaf child and presenting to him even a portion of the vast body of facts and ideas that he would get almost without effort if he could hear.

In their effort to express themselves the children often say amusing things. One of my little girls when asked what language is spoken in Spain replied promptly, "spinach."

A little tot in the kindergarten whose vocabulary was as yet very limited returned from the window, whither she had been sent for observation, and reported that she saw "a man broke." Not such an unusual thing, of course, yet the teacher was puzzled. On looking for herself she saw on the other side of the street a man with a wooden leg.

A boy describing a most exciting woodchuck quest, wrote, "The boy holed the ground with his dig, and the dog hurrahed with his wag."

Another chap wrote in his morning journal, "The wind is very blew and I am a little shiver."

The deaf child of 5 starts behind the hearing child of 2. He goes forward slowly and laboriously, but if taught by modern scientific methods, by the age of 15 or 16 has very nearly overtaken his hearing brother, and, besides, has acquired speech, lip-reading and language, a tremendous task in itself.

You are all aware that a child possessing normal speech, even up to 8 years of age, will lose that speech and become a deafmute if hearing is lost and he is not promptly given special attention for the purpose of preserving his speech. It is astonishing how quickly articulation will begin to deteriorate when hearing is lost, unless the greatest care is exercised. In cases, therefore, in which deafness is brought on by illness or accident, after speech and language have been acquired, the physician should insist on special supervision of the speech by a trained instructor even while medical treatment is still going on. I have found that this necessity for prompt action is not always appreciated by physicians.

A physician has few tasks less pleasant than that of telling the parents that their child will probably always be deaf, and he may well be excused for softening the facts so far as possible. Yet he owes it to the child to make the father and mother intelligent on the subject, and should tell them what he himself knows so well, that without special care the child will either not learn to talk and to understand what others are saying, or the speech which it then has will grow gradually indistinct through lack of the guidance of the ear. And he should urge them to give the matter their immediate attention and put themselves in communication with some one experienced in such matters and be guided by their suggestions. If later the child's hearing should show improvement the attention which has been paid to its speech and education will have done no harm; on the contrary, it will have avoided the loss of precious time that can never be recovered. If, on the other hand, the child is never going to hear better, they will have taken the steps necessary to overcome that handicap so far as possible. Therefore, while they may expect the best, they have planned for all possible contingencies.

Parents frequently say to me by way of apology for not having dealt more wisely with their deaf children: "You see, it was all so new to us. We have never had a deaf child before and had no experience to guide us. We could only grope our way along and do the best we knew." Yet others had learned by bitter experience, and those coming after might easily have profited by their mistakes had the physician put them in communication with someone who knew. Physicians should therefore be able to suggest to parents some way in which they can inform themselves and obtain advice and guidance. Every state in the Union provides for the education of its deaf children to a greater or less extent. I will gladly send to any physician who will drop me a postal, or to any address requested, a list of available schools or teachers in the section of the country specified, and any other information that I think might be helpful.

Personally, I am not an advocate of beginning the actual teaching of speech to a totally deaf child as young as 2 or 3 years of age. Note that I say "totally deaf," for if there is some perception of sound it may be possible to train and develop that imperfect hearing so that it may greatly aid in the acquisition of speech, and this may be begun earlier than articulation teaching to a totally deaf child. It may be done by the mother or the father or older sister of a child if they will undertake it. But the training to understand spoken language by lip reading can not be begun too early in any case, and therefore it is desirable that the parents should know at the earliest possible moment if a child has imperfect hearing. All physicians have undoubtedly seen children in whom deafness was undiscovered or neglected for a surprising length of time, and, on the other hand, they also know the difficulties attending an accurate determination of the degree of hearing of a very young child. But the child should be placed under trained and experienced instruction not later than 6 years of age, and, if physically strong and well developed, it is better to begin at 4½ or 5.

That there is a language learning period is well known to every educator. Centuries of inheritance have rendered the years from 2 to 12 the principal language learning time for the child. The deaf child that has not acquired much language by 12 years of age is doomed to a bitter and discouraging struggle, and it is cruel to let anything interfere with the greatest possible progress in the first ten years of the child's life.

There is no reason for bringing into this paper anything of a controversial nature, but I may say that the educators of the deaf are still somewhat divided, and that while the lines of separation are by no means so sharp as they were, there are still oralists and manualists. Those who employ the manual alphabet and gestural signs in the educational process, and those who exclude all forms of communication not employed by hearing people. I am a pure oralist. My twenty odd years of labor in the work with the deaf have left me still of the opinion that they can be given as good an education by purely oral means as by manual means and, in addition, a priceless boon in the ability to speak and understand the speech of others.

The first school for the deaf in this country was founded in 1817. It was a manual school and the pupils were deaf and dumb. For fifty years all pupils in the schools of this country were taught wholly by signs, manual alphabet and writing. It is for this reason that the terms "deaf and dumb" and "deaf-mute" are so deeply imbedded in the public mind that many people even to-day do not realize that dumbness is not necessarily an accompaniment of deafness. The first school in the United States where the pupils were taught exclusively by means of speech and writing, without signs or the manual alphabet, was established in 1867. Twenty-six years later, in 1893, 25 per cent. of the 8,000 pupils in the schools for the deaf in the United States were taught by the pure oral method. In 1908, fifteen years later, there were 12,000 pupils in school and 56.5 per cent. were taught without the use of signs or the manual alphabet. At the same rate of progress another generation should see the practical disappearance of manual methods from the schoolroom.

It is more expensive to educate a deaf child without recourse to manual methods. It requires a larger proportion of teachers to pupils and a greater degree of training and experience. But it is worth while, and the people of the country are rapidly coming to know it and to decline to accept anything but the best.

Up to fifteen years ago if there came to a family of wealth and refinement a deaf child there were but two alternatives for its education. Either a governess or tutor must be provided at home and the child taught alone, or it must be sent to one of the institutions provided by the states. The same fine private schools that were open to the deaf child's brothers and sisters were closed to him or to her. His or her education had to be obtained under less favorable and agreeable conditions. I was then a teacher in a large public institution for the deaf, having previously served my apprenticeship as a tutor of deaf boys in their homes. It seemed to me that there should be provided, for those deaf children whose means enabled them to avail themselves of the best, as fine a private school as the great city of New York could offer to a pupil with unimpaired hearing. The expense of conducting such a school would necessarily be much greater *per capita* than that of an ordinary school, for a staff of ten or a dozen trained teachers would be necessary for twenty or twenty-five pupils. All the wiseacres shook their heads and said I should be very foolish to undertake such an enterprise. But with the courage of youth I ventured to disregard their advice, and have never had reason to regret my rashness. My most famous pupil, and one of the most interesting, was the most heavily handicapped, for she was the only pupil I have ever had, or probably ever will have, who is both blind and deaf. Yet Helen Keller went through the regular course at Harvard, obtaining her degree, and hers is a household name to-day. Her success has led to the picking up of one more loose thread in our civilization, and to-day there are many deaf blind pupils under instruction in various parts of the country.

Physicians can, if they will, exercise great influence in their own localities. Let me mention two or three points on which there is no time to dwell, but to which attention should be called.

1. The education of the deaf is not a charity any more than the education of your own sons and daughters.

2. All education, and especially the education of the deaf, should be wholly and forever divorced from politics. In too many instances the guidance of institutions for the deaf is entrusted to men of political rather than educational efficiency, and changes in control are made not for the purpose of bettering the school, but for purely political reasons. This is outrageous cruelty to the helpless and dependent child, who innocently suffers for the pride or purse of the politician.

3. The great body of deaf children are bright and normal mentally, and it is unjust to compel the state institutions to include the few abnormal and feeble-minded among the bright ones simply because they are deaf. The feeble-minded deaf should be segregated and taught in schools by themselves as are the hearing feeble-minded.

4. The physician should lend his intelligent aid in placing the deaf child in the school best adapted to his needs.

1 Mount Morris Park, West.

ABSTRACT OF DISCUSSION

Dr. G. Hudson Makuen, Philadelphia: I regret that Mr. Wright's paper has not been more generally heard by members of the section. He has told us things that every otologist ought to know, and I fancy we all do or did know the greater part of it. We know that we have to deal with two classes of deaf children, the congenitally deaf and those who have acquired deafness, and that if the deafness is acquired before the seventh or eighth year, the speech of the child is liable to deterioration. We know also that we have among our little patients those who are only partially deaf and if left to themselves they are but a little better off than totally deaf children, so far as speech is concerned. We know that the modern tendency is distinctly away from the manual and toward the oral method of speech for deaf children. We know that there are public state institutions in which the various methods are taught in various ways, and that there are private institutions such as the one which Mr. Wright has founded.

We know all these things, but what we do not know and what we would like to know is just what these methods are, and how they are applied in the education of the deaf. Now I know nothing of the school over which Mr. Wright presides, and therefore what I shall say does not apply to it, but it has been my fortune to see a great many pupils both during and after their course in other institutions, and I must say that I rarely see one whose speech quite comes up to the standard which I would set for the deaf. I have therefore come to the conclusion that there must be something wrong with their methods. From what I have heard, Mr. Wright's must be in all respects a model school for the deaf, and therefore I am the more disappointed because he did not give us an opportunity to-day to discuss the methods which he employs. I am aware that the oral method of teaching deaf children is a comparatively new thing, and for this reason, I suppose, teachers have not acquired the necessary skill to enable them to accomplish the best results. Too much time, it seems to me, has been given to the teaching of the understanding of language through the visual organs, and not enough to its natural expression through the vocal organs, and too many children who are only partially deaf, are placed in the first or totally deaf class, and receive the same kind of treatment, no effort at all being made either to develop their hearing or to make use of the little hearing they have in the development of speech. It is quite as important, I think, to develop good voice, natural intonations and inflections, in the deaf, as to teach them to understand the language of others, and the teaching of these intonations and inflections, by the way, is a very effective means of helping them to develop an understanding of the speech and language of others.

The other day a small boy was brought to me in consultation who had been for four years in one of our largest institutions for the deaf, and his speech was almost entirely unintelligible, notwithstanding the fact that he had a very considerable amount of hearing power, for the development of which, by the way, absolutely nothing was being done, nor indeed was any use being made of his hearing power in the development of speech.

Mr. Wright says that the feeble-minded deaf should be segregated. I would say that the totally deaf should likewise be segregated, and the hard of hearing, and partially deaf, should be taught to hear as well as to speak, after the manner of Urbantschitsch, of Vienna, and myself of Philadelphia. Their speech should be developed as much as possible through the hearing. I have seen better results obtained with dispensary cases in my own clinic than with the pupils of the large institutions. Moreover, a large proportion of these deaf children are found in poor families who can not pay for any kind of instruction or treatment, and here is an opportunity for a splendid charity. The whole work, in my opinion, should be in the hands of the physician with whom teachers should be directly associated. The teacher, it is true, can do much for these deaf children, but the physician can do quite as much and often more for all those who are only partially deaf and who are acquiring deafness. The teacher can do more than the physician for those who are totally and irretrievably deaf, but they constitute, in my experience, only a small percentage of the entire number coming under our attention and care.

The progressive otologist and laryngologist, therefore, should make himself familiar with the methods of teaching deaf children, and he should have associated with him in his office a teacher to assist him in the practical application of these methods. The physician can not do it of himself, nor indeed can the teacher, but physician and teacher should work in immediate conjunction if the best results are to be obtained.

Dr. Dennis J. McDonald, New York: Two years ago I took up this work with the city authorities of New York, but, strange to say, large cities like New York were the last to take up improvements. I managed to get an appropriation of $50,000 last year for the cases referred to by Dr. Makuen. I have visited many institutions in this country to observe the methods of teaching and could not help but be impressed with the sacrifices of these educators.

I disagree with Dr. Makuen in the statement that physicians have the time to go into this work. The state should be made to understand that these children are as much entitled to education as any others. It behooves otologists to take a special interest in the advancement of this work. In every great school there should be an otologist who should determine the condition of these children on admission and who could examine and report every six months on the condition of these children in regard to the perception of language. If the members of this Section would enter into the spirit of the matter before this time next year great advances in the work would have been made.

Dr. Maury M. Stapler, Macon, Ga.: Deafness in some of these children is caused from the fact that the Eustachian tubes are closed and the air pressure forces the ossicular chain out of position; it is held so until the stapedius muscle is overcome. There is no method of pulling these bones out from the oval window. I have opened up the tubes, applied the suction apparatus and obtained good results in some of these cases. In five minutes some of the children could get up and repeat words. I think that the otologists should take up this work.

Dr. J. Holinger, Chicago: In 1897 I examined the ears of the 504 deaf children in an institution at Jacksonville, Ill. The findings were extremely varied and interesting, and if for no other reason than this, I think attention should be drawn to the fact that a vast amount of knowledge can be acquired in examining the inmates of an institution for the deaf. The results of my examination turned out to be a perfect pathologic museum of all kinds of otologic conditions imaginable. From one ear, for example, a large cholesteatomatous mass was removed containing a sequestrum in the center, leaving a perfectly smooth cavity of the size of a walnut, consisting of external meatus, middle-ear, antrum, mastoid cells and the labyrinth which was lost, together with the other bony parts. Any number of other equally interesting findings might be described. We should try whenever we have the opportunity to make such examinations. Then we will be led to the fundamental work of Bezold, who shows that children who hear tuning forks from b′ to g″ can be taught to use their hearing for talking. It is surprising that these tests are not made more regularly in the institutions.

Mr. John D. Wright, New York: As to Dr. Makuen's regret that I did not take up the methods of teaching, I would say that I shall be glad at any time to read a paper before this Section on that subject. The failure that Dr. Makuen has spoken of in the large institutions for the deaf to develop the imperfect hearing of the pupils is due to lack of sufficient teachers. This Section is influential and should take up this matter. The education of deaf children is not a charity, but is their right just as much as the education of your child is a right. And do not call the schools for the deaf asylums; they are no more asylums than are the public schools; they are schools for the deaf.

AN IMPROVED METHOD OF APPLYING THE PLASTER JACKET

K. D. PANTON, M.B., M.R.C.S. (Eng.), L.R.C.P. (Lond.).
VANCOUVER, B. C.

The following method of applying the plaster jacket in cases of Pott's disease was developed in the emergencies of practice and proved so simple and satisfactory that I have since used it in preference to the older methods:

The plaster jacket must be so applied that it will prevent any movement of the bones in the diseased part of the spine and will also hold the spine in a hyperextended position. The hyperextension transfers the superimposed weight of the head and shoulders from the diseased bodies of the affected vertebræ to the articular processes. In this way all possible movement and pressure are taken from the diseased parts of the vertebræ and resolution is promoted. It is a fallacy to suppose that the jacket can support the weight of that part of the body lying above the diseased area by being built high in the axillæ and holding up the shoulders. Such a cast would cause unbearable pressure and pressure sores in the axillæ. All jackets must fit snugly and have a good grip on the pelvis.

There are various satisfactory methods of applying plaster jackets to children, but to the adult the application is more difficult. The usual method of partial suspension, with the Sayre apparatus, is most uncomfortable for the patient, and he has sometimes to be taken down before the plaster is well set, which results in a poor jacket. It is also difficult for the operator to apply the bandages snugly, for he has to work fast and the patient's body sways more or less. In the following method the patient lies comfortably on his back, his body is quite steady, and the operator can take all the time necessary to apply the bandages with accuracy.

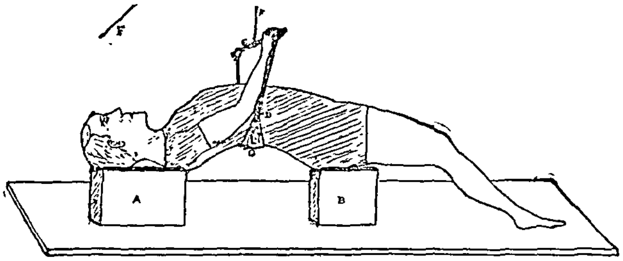
Briefly, the patient lies in the dorsal position, raised about a foot above the operating table. His hips and neck rest on suitable supports and his back is supported on a canvas sling which goes around his back under the kyphosis. The ends of the sling are attached to a spreader. The spreader has a rope and pulley attachment fastened to the ceiling by which it can be raised or lowered. With this apparatus the sling is drawn upward until the back of the patient is sufficiently hyperextended, and the plaster bandages are then applied. The central part of the sling is included in the jacket, while the ends emerge at each side. Although holes are necessarily left at these points, they are small and in no way affect the efficiency of the cast. When the plaster is well set, the ends of the sling are cut across at their points of exit from the mold and the patient is transferred to bed. The central part of the sling remains permanently in the jacket.

The sling is made of stout canvas about 5 feet long, 5 inches wide at the center and narrower toward the ends where it will penetrate the cast. After the patient is in position on the sling, the latter can be made still smaller at these points by tying pieces of string tight around it. The padding of the sling must be very carefully done, for if it does not fit the kyphosis accurately a pressure sore may occur. Horse-collar felt or silence cloth should be used and several pieces sewed to the sling so that they will form two ridges with shelving edges that will lie along each side of the kyphosis and approach the middle line above and below it. Care should be taken to be sure that there is equal pressure all around the kyphosis, that its tip does not project through the padding and press against the sling, and that there are no abrupt edges of felt against the skin.

The spreader, a stout stick about 2 feet long, when in position, lies across the body of the patient. To its ends are attached the ends of the sling and to its center is attached a rope with a pulley attachment in the ceiling by which it can be raised or lowered. Two boxes, a foot high and padded on top, make good supports. The upper one supports the head, neck and tips of the shoulders, while the lower one lies under the lower part of the buttocks. The heels rest on the table. If the jacket is to be made unusually high or low, of course, special supports will be needed.

As for the actual operation, the stockinette shirt is put on the patient, the sling and spreader are adjusted and he is raised onto the supports. The pads are next sewed to the shirt. Then the sling is drawn up further until the back is well hyperextended. It is surprising how secure the patient will feel. The sling grips the back and sides of his body and holds him firm. After making sure that the sling is in exact position and the body is not twisted in any way, the plaster bandages are applied. This is done without hurry; they are put around the body in layers, going from bottom to top. An assistant follows the operator, rubbing the bandages well together and adding more water or plaster as may be needed. I prefer home-made bandages, 5 inches wide and 6 yards long. No salt or alum is needed in the water, as the plaster sets better without any such addition. When the bandages are all on, hollows are cut to allow of movements of the limbs, and, after the plaster is well set, the sling is cut across on each side where it emerges from the cast and the patient is transferred to bed.

For the advantages of this method it may be said that the patient lies in an easy and firm position and the operator can take all the time necessary to do his task thoroughly and make a snug cast. The back can be hyperextended as much as is necessary to be sure that the body weight will be transferred from the diseased bodies of the vertebræ to their articular processes. The body weight is transferred by the whole breadth of the back to the sling, and there is no undue pressure on the kyphosis. There is no hard breathing of the patient with movement of the chest and shoulders, which sometimes occurs when the suspension apparatus is used, causing the upper part of the cast to be loose. The patient can lie on the sling for hours if necessary until the plaster is set. The apparatus can be made anywhere out of common materials.



Patient in position on the sling; a, neck support; b, pelvic support; c, sling going around back under the kyphosis; d, string tied around the sling at the point where it will go through the cast; e, spreader, 2 feet long; f, rope which goes through a pulley in the ceiling; g, site of kyphosis.

261 Hastings Street, East.

REPORT OF FIFTEEN CASES OF PELLAGRA

EDWARD B. BAILEY, M.D.
DEMOPOLIS, ALA.

The following observations have been made on fifteen cases of pellagra which have occurred in my practice during the last eighteen months.

As to etiology, all the patients gave the history of having eaten corn-bread. The usual symptoms of pellagra were exhibited in most instances, so that a mere summary of the observations will be given here. The *previous health* had been good in most cases, except that there was a history of alcoholism in two, and one patient had been confined to bed for four years with multiple spinal sclerosis. In some cases I saw the patient in a second attack. Of *the fifteen patients,* twelve were females. The ages varied from 7 to 60 years. Most were adults of middle age. There was fever in most cases ranging from 99 to 101 F.; in one case the temperature reached 103. The pulse varied from 100 to 130. Marked weakness characterized the general condition in most of the cases. The mind was somewhat affected in three cases. There was diarrhea in fourteen cases, stomatitis in eleven and an eruption in fourteen. The eruption was marked on the legs in one case and did not appear in one case until other symptoms were pronounced. There was vaginitis in three cases, accompanied by edema of the vulva in one.

There were ten deaths, three apparent recoveries, and two patients are at present improved.

Arsenic in the form of Fowler's solution or of atoxyl was given in five cases, but in several it was begun only a few days before death, so that no conclusion as to its value can well be drawn. Transfusion of blood from a recovered pellagrin was performed in one case, but was unsuccessful, death following in less than five hours.

APPARATUS FOR PROCTOCLYSIS AT AN EVEN TEMPERATURE

R. M. HARBIN, M. D.

ROME, GA.

There are certain requirements in the use of salt water by the rectum in peritonitis that must be met: (1) an even temperature for the solution; (2) slow instillation; (3) provision for an escape of rectal gases and the regurgitant flow. Numerous forms of apparatus have been devised, but because of the expense and difficulty of obtaining them they have not come into general use. The apparatus here described was improvised and put into operation in thirty minutes. The ordinary bottle, made on the principle of vacuum non-conductor, found in nearly every drug store, will keep the solution at even temperature. A perforated rubber cork, glass tubes, and a discarded stomach-douche with a rubber funnel are all that are needed in addition.

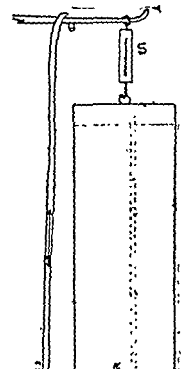


Diagram of apparatus for the instillation of physiologic salt solution into the rectum at an even temperature; S, scales; T, tube thermometer; P, joint; F, soft rubber funnel.

The introduction of the solution, drop by drop, is accomplished by making a joint at P with a small glass dropper or pipette. A tube thermometer may be inserted at T. The ventilator-pipe will dispose of the rectal gases without contaminating the reservoir; it applies the same principle as the ventilating-pipes of plumbing. The end of this ventilator-pipe must be slightly higher than the reservoir. The small caliber of the joint P seems to prevent overdistention of the rectum; but if this should occur the escape-pipe could be made to empty into a basin. Ordinarily there is a slightly intermittent flow, but as intrarectal pressure increases it becomes more marked, and for that reason offers an advantage. Scales may be used and the nurse can chart by weight the solution consumed. This serves as an indicator for refilling. The loss of heat from the supply-tube is practically *nil*, but the latter may be kept covered with blankets. The apparatus should be inverted and disconnected at P for filling.

A patient with perforative appendicitis took, between 2 and 6 p. m., 8 pints of normal saline solution, then perhaps 1 or 2 pints escaped and the patient complained of fulness and slight dyspnea. A soapsuds enema was given and four hours later proctoclysis was resumed. During the next twelve hours 3½ pints were taken with no regurgitation. This made about 10 pints for twenty-four hours. The patient's improvement was such that the salt water was used intermittently.

In another case of acute appendicitis, without drainage, 8 pints were consumed during the first six hours with no return. These preliminary observations were made at my private hospital. The simplicity of this apparatus, the various methods of adjustment to meet certain indications and the ease with which it may be procured warrant further trial.

100 Third Avenue.

AN IMPROVED SALINE TRANSFUSION APPARATUS

JOHN M. GARRATT, M.D.

BUFFALO, N. Y.

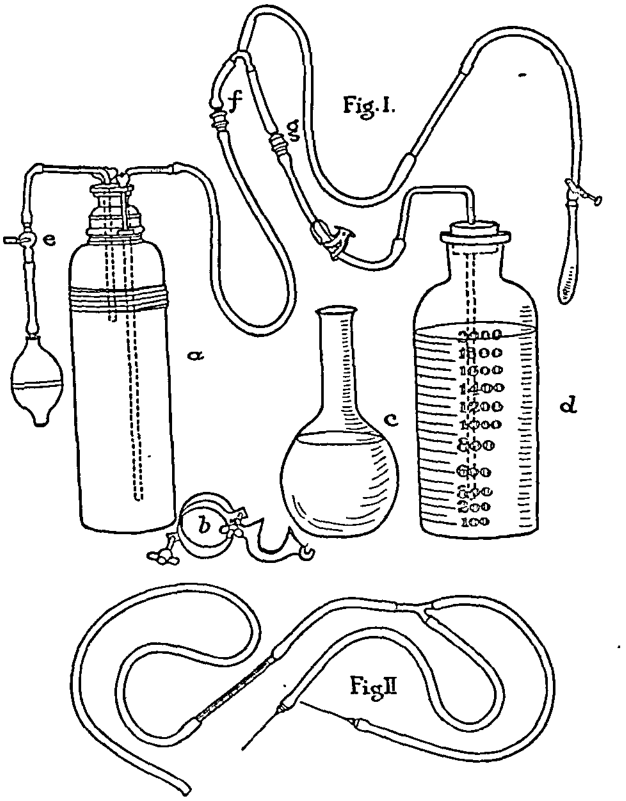
The introduction of saline solution subcutaneously, intravenously or per rectum, to support the circulation in shock and collapse, is markedly efficacious, and if properly given is perhaps the most valuable treatment for these conditions. Intra-abdominal transfusion of salt solutions into the peritoneal cavity, as advocated by Lawson Tait, is of undoubted value to combat shock following abdominal operations, as is also the employment of proctoclysis in the treatment of peritonitis and general toxemic conditions, as suggested by Dr. J. B. Murphy of Chicago.

Aside from the fact that the solution must be aseptic, the temperature of the solution as it enters the tissues is of the utmost importance. With the usual solution-containers—the fountain syringe, glass flask and glass pressure bottle—there is difficulty in maintaining an equable temperature, for they rapidly radiate heat, and usually there is considerable drop in the temperature of the fluid from the start to the finish of the treatment.

Since November of last year I have used as a container a vacuum bottle (originally suggested by myself) of sufficient capacity. The heat-retaining properties of this bottle makes it an ideal container. The apparatus here illustrated has been in use about a year and has proved very satisfactory.

The apparatus for tissue saline transfusion consists of parts adjusted as follows: The cork of the vacuum pressure bottle (a) is fitted with glass tubes, one long and one short. To the long end which dips into the solution is connected a rubber tube (Fig. 2), through which the fluid passes to the needle or needles inserted in the tissues. Near the needle is placed an infusion thermometer by which the temperature of the solution can be observed. The rubber tube attached to the short glass tube has at the end a pressure bulb. Near the pressure bulb a stop-cock is placed for the purpose of relieving the air-pressure on the solution when it is desired to check the flow of the fluid. A cork-holder (b) specially devised holds the cork in place. A small-necked flask (Koch form) of 950 c.c. capacity (c), in which the fluid is raised to the proper temperature, and a graduated bottle (d), capacity 2,000 c.c., in which is stored the saline solution when the apparatus is not in use, complete the outfit. These are placed in a box 8 by 10 by 14 inches. For emergency use are placed in the box also a glass jar containing a sterilized hypodermic syringe with needle and useful hypodermic tablets, and bottles containing adrenalin solution, spirits of ammonia, etc.

For rectal saline transfusion separate apparatus is desirable. The pressure bottle fittings are similar to the other apparatus, the difference being in the arrangement of the tubing attached to the long glass tube which is fitted with two valves, one (f) placed so as to prohibit the back flow of contaminated solution into the pressure bottle and to direct flatus gases to the bottle provided to receive them. The second valve (g) prevents fluid from the flatus bottle mixing with the clean solution. Figure 1 is self-explanatory.



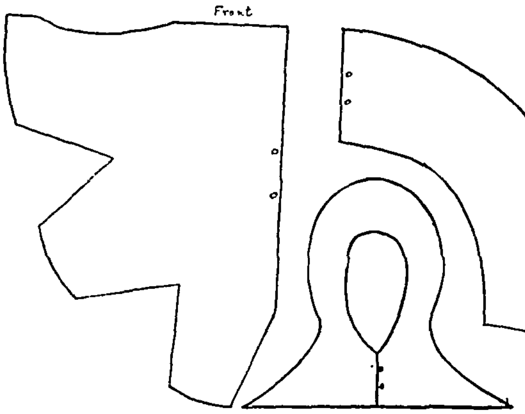
Figs. 1 and 2.—Apparatus for the introduction of saline solution at an equable temperature subcutaneously, intravenously, or per rectum.

Snap-Shot Radiograms.—One drawback to using Roentgen rays to photograph living subjects has been the time exposure required. To overcome this, says the *Scientific American*, a German inventor has devised an induction coil which produces one sudden and intense spark, making it possible to take an instantaneous radiogram. The effect is produced by using a fuse of small silver or copper wire in place of the interrupter in the primary circuit. This is melted when the proper intensity of the current is reached, thus suddenly breaking the circuit and producing an intense discharge. The exposure is from 1/50 to 1/120 of a second; and as it is a simple matter to replace the fuse, a large number of exposures can be made in the course of an hour.

A CAP FOR OUTDOOR SLEEPING

THOMPSON FRAZER, M.D.
ASHEVILLE, N. C.

When sleeping outdoors it is essential that the head and neck be protected from draughts; these are responsible for most of the colds caught by the inexperienced out-of-door sleeper. A knitted or woolen cap made according to the accompanying pattern will be found satisfactory. It covers the head completely except for a narrow oval for the face; in addition, it has a long tail which may be pushed under the pajama coat, thus affording protection to the neck.



Pattern for cap for outdoor sleeping, and diagram of finished cap; left, pattern of head-piece; right, pattern of collar; center, diagram.

TREATMENT FOR CHRONIC CONSTIPATION

GEORGE EDWARD BARNES, B.A., M.D.
HERKIMER, N. Y.

Although various methods of applying medication—diet, hydrotherapy, massage, etc.—in the treatment of chronic constipation have long been employed to the great benefit of multitudes of the afflicted, there has been lacking a treatment that is simple, convenient, effective and easy to be practiced by the patient. Of course, the treatment to be recommended to individuals must often vary. This is true, not only as regards their form of constipation, but also as regards all the abnormal conditions which accompany it and which should be given simultaneous attention. But it is of prime importance that all constipated individuals (especially children) should daily drink sufficient water and should, at the corresponding hour each day, visit the stool and there allow the slow, natural forces sufficient time to act, for in this way there is often established a habit of daily evacuation which is curative.

In cases in which a moderate amount of straining in a stooping posture is not effective the inadequate powers may often be successfully reinforced by a new application of massage. While still seated, the patient places the palmar surface of the fingers of his right hand over the upper part of the descending colon and, making slight pressure, massages with a spiral, descending movement that tube and part of the sigmoid flexure. The finger should preferably be cold. If they are warm they may be cooled in cold water or, in their stead, a suitable cold object, such as a small, smooth glass paperweight, may be used. The cold massage applied at this time initiates a peristalsis which propels the fecal contents downward forcibly into the ampulla recti and thus sets up the normal reflex of defecation. In practice the bowel may be massaged as described three or four times and then an effort at expulsion in stooping posture may be made, and these procedures should be alternately repeated, increasing gradually the pressure of the massage, until there is a successful issue. In order to increase abdominal pressure while straining, the folded fist may be placed two to four inches above the left Poupart's ligament and held there firmly while the soft abdomen above the fist makes gentle pressure on it as the body flexes forward. There is little danger of massaging too hard, but, of course, too strong pressure should not be made, especially when the bowel is filled with hard feces. But such a condition will not occur with daily evacuations. The pressure should be graded somewhat according to the thickness of the abdominal parietes. Of course, this method may be used to supplement or to follow other methods.

This cold massage treatment is not applicable to cases complicated with certain growths, hernias, pregnancy, or certain acute and chronic inflammations of the abdomen and pelvis. In cases of visceral ptosis it is often not advisable, especially in prolapse or displacement of the female generative organs, although it may be used in moderate gastroenteroptosis, provided the left kidney is not descended.

The value of this method is due to the fact that not only is a daily movement produced, but also the whole descending colon and rectum are assisted and trained to empty themselves more or less completely every day, thus to save the patient from the greatest chances of incurring autointoxication and appendicitis.

Therapeutics

TUBERCULOSIS OF THE JOINTS

During the last twenty-five years it has been definitely established that a large proportion of chronic suppurative inflammations of joints are tuberculous in character. These tuberculous joints are sufficiently frequent for every general practitioner, at least occasionally, to have a patient with this disease, and he should be prepared to apply correct treatment, or at least to know what is correct.

Certain general principles of treatment are applicable to all cases:

First.—The patient should be surrounded with the best possible hygienic conditions. He should have abundance of fresh air, preferably out of doors, for a large part of, or the entire day. He should be liberally provided with nourishing and easily digested food, including milk and eggs, to the extent of his tolerance for them. He should be warmly clothed in order to prevent internal congestions due to cooling of the surface of the body. Massage should be employed to prevent atrophy of the muscles while he is at rest.

Second.—The affected joint should be placed at rest, or, as many say, immobilized. This rest or immobilization may be secured in a variety of ways, depending on the particular joint affected and the stage of the disease. At the beginning of the treatment it is generally wise to confine the patient to bed and to employ such immobilization and extension as is practicable. In the case of the hip-joint this may be secured by Buck's extension method and a long side splint. After a few weeks it will generally be found that the inflammation in the joint has become less active and that the general constitutional symptoms have improved. Then it is desirable, in most cases, to take the patient out of bed and to permit him to move about. But the immobilization must be maintained by suitable apparatus. Steel splints or braces, carefully padded, are generally preferred to those made of wood, leather, or plaster, because slender rods of this material possess great strength and practical inflexibility and allow of frequent inspection of the part under treatment and readjustment of the apparatus.

Most American surgeons believe that, when practicable, extension should be combined with immobilization, but some British surgeons believe that this is not so absolutely indispensable that other desirable factors of the treatment should be neglected, when it is impracticable to make use of all at the same time. Certainly immobilization is more important than extension when both cannot be secured simultaneously. In advanced cases, especially when the vertebræ are affected, extension is sometimes injurious and should not be attempted.

The various phases of the subject were exhaustively discussed before the British Medical Association, a report of which appeared in the *British Medical Journal*, Oct. 2, 1909.

The determination of the opsonic index and inoculation with tuberculin were spoken of by Mr. Maynard Smith, of London, who reported 34 patients treated in the inoculation department of St. Mary's Hospital, of which 21 were cured; 9 were improving and still under treatment; 2 had been under treatment for only 2 or 3 months, and 2 failed to show any improvement after six and ten months' treatment.

After a tuberculous abscess has formed, the question of opening it must be considered. Concerning these Mr. Robert Jones, of Liverpool (*British Medical Journal*, Oct. 2, 1909), said: "Experience has convinced me of the value of leaving certain types of tuberculous collections alone as long as possible. I disregard them if they give rise to no symptoms. They are only serious or urgent if they are infected from within or without. It is a mistake to attach the clinical importance to a tuberculous abscess that we do to a collection of pus. The tubercle bacillus we know is not pyogenic. When true suppuration occurs, it is due to a secondary infection. Efficient fixation undoubtedly lessens the liability to abscess formation and also facilitates their disappearance. In a well-immobilized spine a large proportion of these abscesses disappear. Writers who do not observe this obviously never give time for it to occur. In the hip-joint they are especially apt to become nomadic, changing their residence from within the joint to residence without. They become extra-articular in the sense of having no connection with the joint. Often I have noticed collections having appeared from the joint travel down the thigh, become isolated, and then gradually dwindle away. The process of absorption is not characterized by any clinical manifestation. I refuse to open tuberculous abscesses early, not because I dislike a radical operation, but because an operation is necessarily incomplete and ineffective if it cannot remove the disease of which the abscess is but a symptom. If opening the abscess meant the eradication of the disease, clearly the problem would be solved.

"In many cases, however, the abscess is not absorbed, but travels toward the skin. An abscess which forms early in tuberculous disease and is evacuated is, in my opinion, a more serious affair than the abscess treated in this later stage. Simple aspiration of a distended sac will prove of value, and this may have to be repeated frequently. Usually, however, I prefer allowing the abscess to invade the surface, when I make a small puncture ½ inch in length (or less), using the strictest aseptic precautions, scrupulously avoiding the Volkmann's spoon or irrigator, for I do nothing to interfere with the thick sac wall, which provides so admirable a barrier against infection. If these abscesses be attacked in this way, the terrors of infection are assuredly much diminished; for the delay of many months in opening the abscess has given the joint time to make progress, the supply of débris is shut off, and the long, exhaustive discharge which follows early incision is curtailed. I have no conviction more settled in my mind than that of the value of a conservative attitude toward tuberculous abscesses. When we remember that hospital surgeons, with all the facilities for the practice of a rigid asepsis, see only an infinitesimal proportion of these cases, and that the overwhelming number are in the hands of practitioners in slums and country places, handicapped by their environment, totally unable to insist on surgical cleanliness, the policy I advocate seems to me of great importance. My experience warrants me in saying that numbers of children die in all parts of England and Wales because we do not realize the many responsibilities involved in the routine opening of tuberculous abscesses.

"If, however, with the presence of fluid, discomfort, pain, and temperature are present, or if the patient rapidly or steadily declines in condition, then the abscess may be suspected and attacked by good incision, bone searched for, and antiseptic irrigations adopted. Here there will be found a mixed infection, and surgical interference is urgent and most effective where most radical. Again, for geographical reasons, a retropharyngeal abscess demands immediate incision, preferably behind the sternomastoid, and in those rare instances of collections in the posterior mediastinum where one finds spasmodic attacks of dyspnea, evacuation should be immediate by costotransversectomy over the affected articulation."

With regard to resection of tuberculous joints the teachings of Jones show evidence of wise conservatism based on wide experience. He points out that tuberculosis produces very different effects in children from those observed in adults. In the child, when judiciously treated, its progress is benign. In the adult, on the other hand, it is more intractable and more likely to result disastrously.

In children an early excision is usually unwise, being followed by great deformity from interference with the growth of the limb. A late excision is usually useless, an amputation being generally necessary.

In adults general dissemination is more likely to occur, and consequently an early operation is more urgently demanded. This results in earlier and non-complete fixation of the joint, which is the object which Nature strives to attain in cases not subjected to operation.

In advanced cases of tuberculosis of the joints discharging sinuses are often present, and these frequently persist for years.

Emil G. Beck, Chicago (*British Medical Journal,* Oct. 2, 1909), has proposed to treat these sinuses by injections of a paste made by mixing, while boiling, bismuth subnitrate and petroleum, the resulting paste containing 33.3 per cent. of bismuth subnitrate. These injections, supplemented by Roentgen-ray examination, afford important aid in diagnosis. In many instances they also result in a cure of the sinus. Their use has sometimes been followed by untoward results, the paste blocking up the sinus and damming back the pus, so that septic infection has resulted. In some instances bismuth poisoning has occurred. It has happened that the bismuth injection in a thin-walled sinus near a joint has caused accumulation of pus near the joint, which has ruptured into and caused infection of the joint.

Bearing in mind the necessity for caution in order to avoid these unfortunate results, Baer, of Baltimore (*Bulletin Johns Hopkins Hospital,* October, 1909), believes that injection of Beck's bismuth paste will cause diminution of the discharge and healing of the sinus in many instances.

In connection with the evacuation of tuberculous abscesses, resection of the joints, and the treatment of tuberculous sinuses, mention must also be made of the use of iodoform.

Sir William Macewen, of Glasgow (*British Medical Journal,* Oct. 2, 1909), recommends the injection of sterilized iodoform emulsion, introduced into the center and immediate vicinity of the tuberculous part. This treatment is especially applicable while the disease is still discrete and confined to the epiphyses. It also acts favorably, but more slowly in the second stage, when the tubercles have become confluent, and caseation and liquefaction have occurred.

Macewen advises, after the radical removal of a local lesion, the application of a mixture of iodoform and boric acid, 1 to 4. He deems it important in this mixture for the iodoform to be in large crystals instead of in fine powder. The crystals are not readily absorbed, and are, therefore, not so likely to cause toxemia, and their local effect is continued for a longer time. The finely powdered iodoform, on the other hand, is rapidly absorbed, and may cause serious poisoning, while at the same time its local effects pass off quickly. The iodoform may also be injected into abscess cavities from which tuberculous fluid has been drawn off by an aspirator.

In speaking of para-articular tuberculosis, Mr. A. H. Tubby, of London (*British Medical Journal,* Oct. 2, 1909), recommends, after cutting down to the bone, and after evacuating the granulations and pus, and after thoroughly scraping the cavity, the application to all parts of the diseased region of either "camphorated naphthol, or, better still, a solution of chlorid of zinc of a strength of 10 per cent."

Finally arises the question as to what should be done with cured, but deformed, tuberculous joints. Robert Jones (*British Medical Journal,* Oct. 2, 1909) points out that "to break down such adhesions, or to endeavor to enforce 'passive movements,' would be a highly hazardous adventure." In otherwise suitable cases a careful experiment may be made by trying to increase the angle of the joint by five degrees by means of a splint worn for from ten to fourteen days. If this results in increased movement of the joint, a favorable prognosis may be given, and the treatment may be continued. If the joint remains stiff, perseverance may cause disaster.

Tuberculosis in Japan.—Kitasato contributes an article on this subject to the *Zeitschrift für Hygiene,* lxiii, 1909. The conditions in Japan are peculiarly interesting, as there are comparatively no cattle in Japan and consequently human tuberculosis is entirely independent of the bovine type. He examined the sputum of 152 consumptives continuously to detect the possible presence of bacilli of the bovine type but always with negative results, the human bacilli being found constantly in pure cultures. Statistics show that the disease is becoming more prevalent in Japan.

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[*For other information see second page following reading matter*]

SATURDAY, DECEMBER 25, 1909

[The large amount of space occupied by the index this week makes it necessary to omit some departments and to curtail others.]

AMERICAN STANDARDS IN EDUCATION

In an address on "American Standards of Education," given before the American Association for the Advancement of Science,[1] Elmer Ellsworth Brown, United States Commissioner of Education, calls attention to the many efforts, mostly since 1900, made to standardize educational institutions in this country.

The fixing of standards is properly a state function; but no attempts were made by any state to standardize its educational institutions until 1892, when New York adopted a standard requiring that any institution to be ranked as a college (medical colleges seem to have been excepted) should have at least six professors giving their entire time to college and university work, that it should give a four-year course of studies of college grade, that it should require for admission four years of high-school work, and that it should have resources of at least $500,000, together with suitable provision for buildings, furniture, equipment and proper maintenance. In 1895 Pennsylvania adopted a standard requiring a four-year course and six regular professors devoting their entire time to teaching, but left the standards of admission and other matters to the judgment of a university council. In Pennsylvania likewise medical colleges seem to have been excepted from regulation. In 1893, in California, the state board of education was made responsible for the grading and classification of higher educational institutions. In 1907 the state educational board of Iowa was authorized to accept graduation from the courses in the state university and from other institutions of learning of equal rank in the state as evidence of fitness for a teacher's state certificate.

Besides the state efforts, various organizations have been working toward the standardizing of educational institutions. Among the organizations mentioned are the Association of American Universities, the College Entrance Examining Board, the Carnegie Foundation for the Advancement of Teaching, the National Conference Committee, representing several associations of colleges and secondary schools, the National Association of State Universities, and the Council on Medical Education of the American Medical Association. Mr. Brown names these organizations, not as a complete list, but to show how wide-spread is the effort to remove the stigma of reproach from American educational institutions. He then asks why legislatures should incorporate institutions, giving them the right to grant degrees, without making any provision for determining the meaning and worth of those degrees. He continues: "It is not merely an academic question. It is a moral question. False pretenses in the realm of education are a peculiarly flagrant form of fraud, for they cheat our American youth of their American right to a fair chance. They operate no less disastrously when . . . incompetent teachers . . . offer an inferior grade of instruction under the delusion that it is as good as the best. The well-meaning no less than the dishonest need some impartial test by which their educational offering may be proved, of what sort it is."

What Mr. Brown says regarding educational institutions in general applies with particular force to institutions professing to train practitioners in medicine, since the graduates of these institutions go forth with a much greater responsibility than the graduates of other schools. The public has the right to demand that medical colleges shall turn out as graduates only those who are well trained and capable of recognizing and combating disease.

THE CHURCHES AND TUBERCULOSIS

Certain metropolitan churches have organized what they call "tuberculosis classes." These consist of patients suffering from tuberculosis who, because of various conditions, cannot leave home, but who are taught how to live and disciplined in right living by regular attendance on what is called "class day" under the auspices of the church. Each week every patient brings for the inspection of the physician aiding in the work a book supplied for the purpose, in which he keeps an accurate and complete record of his daily habits, diet, weight, sleep and the amount of time he has passed in the open air. This enables the physician to suggest various improvements in the mode of living, to correct errors of diet and hygiene and to recognize early such special symptoms as may require treatment. The daily life of the patient, thus kept under a supervision such as is not possible when only a weekly or even more frequent visit to a dispensary is made, can be regulated almost as in a sanatorium.

A recent report of St. George's Church, New York City, shows how much can be accomplished during the course of a year for a small class of patients to whom individual attention is given. The results, considering that the cases cannot be so carefully selected as in sanatoriums, that the conditions are not so favorable and that there are many disadvantages, compare well with tuberculosis sanatorium statistics. Out of twenty patients, two were discharged as being "apparently cured"; four were "arrested," and five were "improved." More than half of the whole number of patients, though still living at home with their families, their ordinary lives being unchanged except by the advice of the physician, the influence of the example of others and the incentive gained from the movement, have been considerably improved in the course of a single year. The most important factors, of course, are the diet and the fresh air. These patients are taught and encouraged to live in the open as much as possible and to admit fresh air to their houses.

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[1] Brown, E. E.: American Standards in Education and the World-Standard, Science, Oct. 1, 1909, xxx, 417.

The weight statistics are interesting. All except one who had been in the class for more than three months had gained in weight, the gain ranging from one to twenty pounds. The case of the one patient who lost in weight was an especially unfavorable one. Here are some definite results that show how much can be accomplished by instruction, example, discipline and charity for tuberculous patients even in city life. We say charity because some of the patients had to be helped to secure the proper nutrition. Here seems to be a good field for the churches. There can be no doubt of the benefit to be derived from the tuberculosis class movement.

THE INDEX

The index to the current volume of THE JOURNAL appears in this issue. The greatest care has been exercised to make it technically and mechanically perfect. Special effort has been made to bring titles under the fewest possible headings consistent with descriptive accuracy. And herein lies one of the difficulties in making a perfect index: authors frequently employ titles that are not sufficiently descriptive of the substance of their papers. The general plan of the index has not been changed, but it may facilitate its employment to restate it. The index is in three parts—the "General Index" is a complete index to all reading matter that has appeared in THE JOURNAL for the past six months, the "Index to Subjects" is an index of the articles that have appeared in the leading medical journals of the world during the same period, sufficiently complete and exhaustive for all ordinary purposes, and the "Index of Authors" contains the names of all authors whose articles are in the "Index of Subjects." Attention is again called to the "Guide to Current Medical Literature," a separate pamphlet in which is printed all the matter of the index together with the itemized lists of all articles that have appeared in medical periodicals. In this separate form it is extremely convenient and useful and avoids the necessity of handling loose copies or the bound volume. A better acquaintance with it would greatly extend its use.

Yellow Fever.—There has been no yellow fever in the United States during 1909 and a marked absence of it during the quarantine season of this year in Cuban, Mexican, West Indian, Central and South American ports, which is attributed to the greater attention being paid to sanitation.

Medical News

ALABAMA

County Society Meetings.—Shelby County Medical Society, at its annual meeting in Calera, December 14, elected Dr. John R. Pow, Maylene, president; Dr. Joel Chandler, Columbiana, vice-president; Dr. Eugene S. Miller, Columbiana, secretary; Dr. James F. Trucks, Helena, treasurer; Dr. Victor H. Williams, Calera, county health officer; and Dr. John I. Reid, Aldrich, censor.——Bessemer Medical Society, at its annual meeting, December 9, elected Dr. Thomas I. Conwell, president; Dr. Lucian A. Spencer, vice-president; and Dr. William Waldrop, secretary.——Colbert County Medical Society, at its annual meeting in Tuscumbia, December 7, elected the following officers: Dr. William H. Green, Tuscumbia, president; Dr. Walter J. Maxwell, Sheffield, vice-president, and Dr. Julius T. Haney, Tuscumbia, secretary-treasurer.——At the annual meeting of Limestone County Medical Society, held in Athens, Dr. Henry A. Darby, Athens, was elected president; Dr. E. Burke Hardin, Athens, vice-president; Dr. C. O. King, Athens, secretary-treasurer; Dr. Benton S. Pettus, Athens, county and city health officer; Dr. J. J. Pettus, health officer of Mooresville; and Dr. William E. Maples, health officer of Elkmont.——Jackson County Medical Society held its annual meeting at Scottsboro, December 10, and elected Dr. J. W. Boggess, president; Dr. William C. Maples, Scottsboro, vice-president; Dr. Edward Boyd, Scottsboro, secretary-treasurer, and county health officer; and Dr. S. H. Jones, censor.——At the annual meeting of Etowah County Medical Association, held in Gadsden, December 1, Dr. John P. Stewart, Attalla, was elected president; Dr. Herschel V. Baskin, Coats Bend, vice-president; Dr. William C. Williams, Gadsden, secretary; Dr. George L. Fawcett, Gadsden, treasurer; Dr. Hartford L. Ison, Gadsden, censor; Dr. Claude L. Murphree, Gadsden, city and county health officer (reelected); and Dr. James W. Cox, Gadsden, county physician, (reelected); Dr. James H. Wood, health officer of Attalla; Dr. William H. Acton, health officer of Alabama City, and Dr. John H. Ellison, health officer of Altoona.——The officers of the Morgan County Medical Society, elected at its annual meeting, December 2, are as follows: President, Dr. William L. Dinsmore, Decatur; vice-president, Dr. Felix B. Hunter, Falkville; secretary-treasurer, Dr. Joseph L. Gunter, New Decatur; censor, Dr. B. Walne Watson, New Decatur; county health officer, Dr. Frank P. Pettey, New Decatur; health officer of Decatur, Dr. William L. Dinsmore; of New Decatur, Dr. Michael W. Murray; of Hartsells, Dr. Hugh C. McRee; of Falkville, Dr. Felix B. Hunter; of Trinity, Dr. Frank Emens; of Austinville and Fairview, Dr. Roy M. Buchanan, New Decatur; of Flint, Dr. J. W. Crow; and of Somerville, Dr. P. W. Brindley; county jail physician, Dr. Henry C. Bracken, New Decatur; and physician to the poor house, Dr. P. W. Brindley.

COLORADO

Consumptive Hospital Report.—The tenth annual report of the Jewish National Hospital for Consumptives shows that 353 patients were treated last year, and that the expenses of the institution were $88,143; of this about one-eighth was used for the purpose of publicity.

El Paso County Physicians Elect.—At the annual meeting and banquet of the El Paso County Medical Society, held in Colorado Springs, December 8, Dr. Gerald B. Webb was elected president; Dr. Zenas H. McClanahan, vice-president; Dr. Lewis H. McKinnie, secretary; and Drs. Peter O. Hanford and Philip A. Loomis, delegates to the state society, all of Colorado Springs, and Dr. George B. Gilmore, treasurer, Colorado City.

ILLINOIS

Insane Endangered by Fire.—The north annex of the Jacksonville State Hospital was partially destroyed by fire December 21. The 200 insane women in that portion of the hospital were removed without casualty. The damage is estimated at $50,000.

Champaign County Physicians Meet.—Champaign County Medical Society, at its annual meeting, held December 9, in Champaign, elected the following officers: President, Dr. John Martin, Tolono; vice-president, Dr. Ellen Miner, Champaign; secretary-treasurer, Dr. Nellie M. Baker, Urbana; censors, Drs. Albert S. Wall and William L. Gray, Champaign, and James S. Mason, Urbana; delegate to the state medical society, Dr. William E. Schowengerdt, Champaign, and alternate, Dr. Clyde D. Gulick, Urbana.

Personal.—Dr. Rufus W. Gillette, Danville, is seriously ill in St. Elizabeth's Hospital, Danville.——Dr. Charles A. Griswold, Fulton, fell in his home, December 7, severely wrenching his right leg.——Dr. James H. Shepperd, Peoria, who has been ill with ptomaine poisoning, has recovered.——Dr. Edwin W. Reagan, Canton, has been elected president, and Dr. LeRoy R. Chapin, vice-president, of the trustees of the Murphy Hospital fund.——Dr. William K. Smith, LaHarpe, was operated on in the Macomb Hospital, December 5.

Chicago

Jonnesco in Chicago.—Dr. Thomas Jonnesco, of Bucharest, visited the city December 21 and 22, demonstrated his technic of spinal anesthesia at the Cook County Hospital, and also delivered an address on the same subject before the Chicago Medical Society.

College Election.—The Chicago Eye, Ear, Nose and Throat College held its annual meeting December 1, and reelected Drs. William A. Fisher, president; Dr. Adolphus G. Wippern, vice-president; Dr. John R. Hoffman, secretary, and Drs. Thomas Faith and Harry W. Woodruff, directors.

Juvenile Home Incorporated.—The Frances Juvenile Home Association was incorporated December 16, with the purpose of providing for, and giving medical treatment to children afflicted with offensive diseases, and of educating and making self-supporting, children entrusted to its care.

Heavy Cut in Health Appropriation.—The city comptroller has asked Dr. William A. Evans, health commissioner, to reduce the estimate of expenses of the health department from $607,000 for the year to $540,000. This, if done, will curtail the work of medical inspection, school nursing, vital statistics, and the activities of the sanitary bureau.

INDIANA

Personal.—Dr. Charles L. Thomas, Logansport, was seriously injured by the overturning of an automobile in Chicago December 6. His shoulder was dislocated, his jaw broken, and he suffered internal injuries.——Dr. Rufus F. Frost has been appointed secretary of the board of health of Huntington and Dr. Daniel Yingling a member of the board.——Dr. David Cohen, Jeffersonville, has resigned as township physician.——Dr. Charles B. Kern, Lafayette, has been reappointed physician of Tippecanoe county.——Dr. Winfield S. Faulds has been elected president, Dr. Harry F. Walsh secretary, and Drs. William P. Lane and I. L. Milstone, members of the Gary Board of Health.——Drs. Oliver P. Graham and Joseph Zuerner have been recommended for appointment as members of the Jeffersonville Board of Health.

Elections.—At the annual election of the Vigo County Medical Society, held in Terre Haute, December 7, the following officers were elected: Dr. J. Rudolph Yung, Terre Haute, president; Dr. Thomas C. Louks, Prairieton, vice-president; Dr. Charles N. Combs, Terre Haute, secretary-treasurer; Drs. Myron A. Boor and Malachi R. Combs, Terre Haute, delegates to the state association; Drs. Ernest W. Layman and J. Rudolph Yung, Terre Haute, alternates, and Dr. Bennet V. Caffee, Terre Haute, censor.——Ripley County Medical Association, at its annual meeting, elected Dr. James M. Pinkston, Holton, president; Dr. Reece C. Townsend, Osgood, vice-president; Dr. Bine Whitlach, Pierceville, secretary-treasurer; Dr. Theodore M. Brenton, Osgood, censor; Dr. John R. Pate, Milan, delegate to the state association; Dr. Edward D. Freeman, Osgood, alternate; Dr. E. D. Freeman, delegate to the district society; and Dr. George T. Beckett, Versailles, alternate.——At the annual meeting of Allen County Medical Society, December 7, the following officers were elected: Dr. Charles E. Barnett, president; Dr. Alfred L. D. Kane, vice-president; Dr. J. Clifford Wallace, secretary; Dr. William P. Whery, treasurer; Drs. Hermann A. Duemling, Samuel H. Havice and Edward J. McOscar, censors; Drs. Miles F. Porter and Charles R. Dancer, delegates to the state association, and Drs. Charles G. Beall and John H. Gilpin, alternates, all of Fort Wayne.——Floyd County Medical Society held its annual meeting December 3, at New Albany, and elected the following officers: President, Dr. Robert W. Harris; vice-president, Dr. Chester C. Funk; secretary, Dr. George E. Dash; censors, Drs. John Hazlewood, Henry B. Shacklett and William C. Winstandley, and delegate to the state medical association, Dr. Elihu P. Easley, all of New Albany.——Lake County Medical Society, at its annual meeting, held in Hammond, December 2, elected Dr. Eldridge M. Shanklin, Hammond, president; Dr. Theodore B. Templin, Gary, vice-president; Dr. Herman C. Groman, Hammond, secretary-treasurer; Dr. John E. Metcalf, Gary, censor, and Drs. William F. Howat and Herman C. Groman, Hammond, delegates to the state medical association.

IOWA

Personal.—Dr. Rosa M. Liebig has been reappointed overseer of the poor of Marshalltown.——Dr. Frederick A. Seemann is reported to be seriously ill at his home in Sioux City.——A fire, resulting from a defective flue, caused a damage of about $2,500 to the home of Dr. Alphonse L. Hageboeck, Davenport.——Dr. Elijah W. Jay, Marshalltown, underwent an operation for gall-stones in Augustana Hospital, Chicago, November 26, and is making a satisfactory recovery.——Dr. and Mrs. Thomas M. Wall, Osceola, have gone to the Isle of Pines for the winter.

Society Meetings.—The Cerro Gordo County Medical Society, at its annual meeting, held in Mason City, December 8, elected Dr. Francis E. McGlone, Mason City, president; Dr. Albin B. Phillips, Clear Lake, vice-president; Dr. Ida G. Rhoades, Mason City, secretary-treasurer. Dr. Walter L. Bierring of the State University held a clinic in the afternoon, and the annual banquet was held in the evening.——At the annual meeting of Johnson County Medical Society, held in Iowa City, December 1, Dr. Clarence E. Van Epps, Iowa City, was elected president; Dr. Calvin W. Harned, Iowa City, vice-president; Dr. Lawrence W. Littig, Iowa City, secretary-treasurer; Dr. Francis L. Love, Iowa City, censor; and Dr. Albertus J. Burge, Iowa City, delegate to the state society.——Iowa County Medical Society, at its annual meeting in Marengo, elected the following officers: President, Dr. Arnold C. Moon, Williamsburg; vice-president, Dr. A. F. Randolph; secretary-treasurer, Dr. Eric N. Brown, Marengo; delegate to the state society, Dr. Jasper L. Augustine, Ladora; censors, Drs. William H. Martindale, Marengo, Thomas J. Shuell, Parnell, and Edgar B. Henderson, Marengo.——Woodbury County Medical Society, at its annual meeting, held in Sioux City, elected the following officers: Dr. J. Herbert Darey, Sioux City, president; Dr. Ernest A. Jenkinson, vice-president; Dr. William J. Cremin, Sioux City, secretary; Dr. Roy M. Conmey, Sergeant Bluff, treasurer; and Drs. James F. Taylor, Salix, and Prince E. Sawyer, Sioux City, delegates to the state society.

KENTUCKY

New City Hospital.—Jefferson County Medical Society, at its last meeting, endorsed the plan of obtaining the passage of an act securing a bi-partisan hospital commission under which the new Louisville City Hospital could be erected by funds provided from a bond issue to be voted at the next general election. To create sentiment in favor of this act, a committee of five was appointed to wait on the commercial bodies, the mayor and the council.

Society Meeting.—At the annual meeting of the Franklin County Medical Society, held in Frankfort, Dec. 6, the society endorsed the bill regulating the sale of opium and its derivatives, and discussed the proposed ordinance regulating the sale of milk. The following officers were elected: President, Dr. Joseph L. Barr, Frankfort; vice-president, Dr. M. C. Darnell; secretary-treasurer, Dr. Urbane V. Williams, Frankfort, and delegate to the state society, Dr. Nevil M. Garrett, Frankfort.

Personal.—Dr. Charles Z. Aud, Cecilian, has been appointed a member of the State Board of Health, vice Dr. Joseph M. Mathews, Louisville, resigned.——Dr. Jefferson D. Pryor, Mayfield, was severely burned on the face in an explosion a few days ago.——Dr. William F. Scott, Somerset, is suffering from a broken nose, caused by a fall recently.——Dr. Robert L. Woodard, Hopkinsville, has been made medical director of the Indiana Industrial Life Insurance Company, Terre Haute.——Dr. James A. Averdick, Covington, is seriously ill with septicemia.——Dr. Thomas J. Glenn has been elected physician of Ludlow.

Milk Regulation.—At a conference between the State Board of Health, the representatives of the Louisville Health Department and the Indiana State Board of Health, it was decided that after the expiration of 90 days all milk being shipped into Louisville must come from herds that have been submitted to the tuberculin test and found free from tuberculosis. Under a regulation already in effect, the cattle shipped into the Bourbon Stock Yards for sale as dairy cattle must bear the stamp of the State Veterinarian as being free from tuberculosis. Much excellent work has been done in the county, but there still remains a large part of the dairy cattle to be tested. About 16 per cent. of those tested have reacted.

Inspection of Bakeries.—At a conference of the State Board of Health, representatives of the State Experiment Station at Lexington, and the city health department, a system of inspection and enforcement of the rules regarding the operation of bakeries was adopted. These regulations define the character of the building to be used as bakeries, lighting, plumbing, drainage, cleaning and care of walls and woodwork; specifies that bakerooms shall be used for that purpose only, not for sleeping, lounging or toilet rooms; spitting in workrooms is prohibited; cleanliness of employees, as to person and clothing, is enjoined; the health of the employees is regulated; the character of the water supply used is defined; well water cannot be used until a certificate of its analysis has been obtained from the State Experiment Station; wrapping of bread and bakery products in newspapers, and affixing tags to bread is prohibited; no flour, preserves, or jellies can be used until they conform to the regulation of the pure-food laws of the state, and the use of oleomargarine is prohibited.

MARYLAND

Personal.—Right Rev. Luther B. Wilson, M.D., will preside at the Baltimore Conference of the Methodist Episcopal Church next spring.——Dr. James H. Stauffer, Baltimore, is ill in Johns Hopkins Hospital, with leukemia.

Found Home for Widows and Orphans.—The Medical and Chirurgical Faculty of Maryland, which has had a fund since 1903 for the immediate relief of the widows and orphans of its deceased members, adopted plans, December 16, founding a home for widows and orphans, and appointed a board of managers to have charge of the home and administer its affairs. Subscriptions are already being received for this home and one gift of $1,000 has been pledged. The home will be located near Baltimore.

Special Legislation.—The Medical and Chirurgical Faculty of Maryland, at its meeting in Baltimore, December 16, considered certain important matters of legislation, and approved the proposed pure food and drug bill and the law to license and regulate midwives. The first of the bills follows closely the national pure food law, and provides for an appropriation of $10,000 a year to the State Board of Health for the enforcement of the law, and makes it mandatory on states attorneys to prosecute alleged violations. The second bill provides that a license be required from all midwives after July 1, 1910. The law is made not retroactive. In cases not normal, or in the case of inflammation of the eyes of the infant, the midwife must call in a regular practitioner.

Society Meeting.—At the annual meeting of the Baltimore City Medical Society, held Dec. 7, Dr. Harvey W. Cushing was elected president; Dr. Charles W. Mitchell, vice-president; Dr. W. Edward Magruder, secretary; Dr. William S. Gardner, treasurer; Dr. Charles E. Brack, censor (reelected); and members of the house of delegates, Drs. Samuel F. Earle, Jr., Herbert Harlan, William T. Lockwood, William S. Thayer, Edward L. Whitney, Richard H. Follis, Archibald C. Harrison, Joseph L. Hirsh, Howard A. Kelly and Arthur M. Shipley. Dr. William Pepper, Philadelphia, delivered an address on "The Medical Life of Benjamin Franklin." A portrait of Dr. F. E. Chatard was presented to the faculty by Dr. John W. Williams, and Dr. Harry Friedenwald presented a portrait of Dr. Nathaniel G. Keirle, and also a copy of "Studies in Rabies," by Dr. Keirle. Dr. G. Milton Linthicum, president of the Medical and Chirurgical Faculty, of Maryland, received the gifts.

MICHIGAN

Case of Leprosy Found.—A case of leprosy is reported in Calumet. The patient is a Finn who was in the government employment in Alaska five years ago. The diagnosis has been confirmed by Dr. A. S. Warthin of the University of Michigan.

Shacks for Tuberculosis Patients.—At a meeting of the executive committee of the Antituberculosis Society of Ann Arbor, November 30, it was voted to erect open-air shacks at the University Hospital with accommodation for eight patients, and one at the Homeopathic Hospital to accommodate four patients.

Personal.—Dr. William A. Stone has resigned as assistant superintendent of the Michigan State Hospital, Kalamazoo, and Dr. Herman Ostrander has been appointed his successor.——Dr. Allen L. Cory has been elected president of the Stanton Antituberculosis Society.——Dr. James H. Dempster, Detroit, has succeeded Dr. Herbert M. Rich as editor of the *Detroit Medical Journal*. Dr. Rich remains on the staff as collaborator in the department of pediatrics.

County Society Meets.—The annual meeting and election of officers of the Bay County Medical Society was held in Bay City, December 13. The retiring president entertained the society at a banquet, after which the following officers were elected: President, Dr. John W. Hauxhurst; vice-president, Dr. Roy C. Perkins; secretary, Dr. Hubbard N. Bradley; treasurer, Dr. Charles H. Baker; delegate to the state society, Dr. William R. Ballard, and alternate, Dr. John McLurg, all of Bay City.

NEBRASKA

Poliomyelitis Contagious.—The Nebraska State Board of Health has decided that anterior poliomyelitis, which is now prevalent in the state, is contagious and has ordered the establishment of quarantine.

Bequest to Hospital.—M. M. Gregorian, a day laborer who came to this country from Armenia a quarter of a century ago, and who died recently at Norfolk, has bequeathed $1,000 to the Methodist Hospital, Omaha, and $1,000 each to two hospitals in New York City.

Personal.—Dr. Alexander Bear, Norfolk, for forty years a practitioner of north Nebraska, has retired and moved to his old home in Richmond, Va.——Dr. DeWitt C. Bryant, Omaha, is taking a tour of the world.——Dr. John I. McGirr, Beatrice, has been appointed first lieutenant and assistant surgeon Medical Corps, Neb. N. G., and has been assigned to the first machine gun company.——Dr. and Mrs. Walter O. Henry, Omaha, and Dr. Leslie M. Stearns, Kearney, have returned from Europe.

Society Meetings.—At a meeting of the physicians of Jefferson county, in Fairbury, December 3, the Jefferson County Medical Association was reorganized with the following officers: President, Dr. George A. Heath, Fairbury; vice-president, Dr. Thomas J. Andrews, Fairbury; secretary-treasurer, Dr. Samuel E. Hawes, Fairbury; delegate to the state society, Dr. Gibbert Pritchett, Fairbury; alternate, Dr. George A. Heath, Fairbury; and censors, Drs. J. S. Taylor, Steele City; Harry Brown, Daykin, and Herman Kunze, Fairbury.——At the annual meeting of the Lancaster County Medical Society, held in Lincoln, December 4, the following officers were elected: Dr. John T. Hay, Lincoln, president; Dr. Laurence B. Pilsbury, Asylum, vice-president; Dr. Francis A. Graham, Lincoln, secretary-treasurer; and Drs. Francis A. Graham and Edward W. Rowe, Lincoln, delegates to the state medical society.

NEW YORK

To Relieve State Hospitals.—In order to relieve the congestion of the state hospitals for the insane near New York City, the State Lunacy Commission purposes to erect seven large cottages, each capable of housing 200 patients. Six of these cottages will be erected in connection with the Long Island Hospital, three at Central Islip and three at Kings Park; the other one will be on Wards Island. These buildings will cost about $750,000.

Examination of Water Supplies.—At the recent sanitary conference at Rochester, it was announced that the State Hygienic Laboratory had increased its facilities by establishing a station for the sanitary investigation of water supplies, in the more immediate neighborhood, at Cornell University, Ithaca, N. Y. Health officers, who will find this laboratory more conveniently located for examination of the water supplies of their districts, have been notified. The laboratory will endeavor to make examination and control analysis of each water supply in the district at least once a month. Regular reports will be published for the information of citizens. An invitation has been extended to all health officers and others interested in the maintenance and improvement of the potable waters of New York state to visit this laboratory and familiarize themselves with its methods.

New York City

The Guild of St. Luke.—A number of physicians met at Cathedral College, December 8, and organized a society by this name to be in affiliation with similar societies throughout Europe. This organization has for its object the study of the ethical and historical problems connected with medicine. Dr. Charles E. Nammack was elected president; Drs. Thomas Addis Emmet and Jose M. Ferrer, vice-presidents; Drs. Thomas F. Reilly and James J. Walsh, secretaries.

Physical Defects in School Children.—The official report of Dr. Edwards A. Park, in charge of the examination made during the summer of more than a thousand school children from the tenements with the view of determining the need of open-air schools in New York City shows that of 1,233 children examined, 289, or 23 per cent., showed the characteristic reaction after having been subjected to tests for tuberculosis. In many of these, however, the focus of tuberculosis was walled off and was not likely to exert a serious influence on the general health. There were 50 cases of enlarged tonsils and adenoids; decayed teeth were very general with the result that it was difficult to determine whether the numerous cases of enlarged glands of the neck were due to them or to tuberculosis. Five cases of endocarditis were noted.

Art Commission Approves Designs.—At the recent meeting of the Municipal Art Commission, the designs for the new Bellevue Hospital were approved. It is estimated that this group of buildings will cost $2,750,000, and will consist of two surgical pavilions, a building used for operating rooms, surgical wards and rooms for the house staff and an extension to the laundry rooms and store rooms. This group of buildings will be erected on the blocks east of First avenue between Twenty-sixth and Twenty-ninth streets. The commission also approved designs for three open-air concrete tuberculosis pavilions, arranged with movable sashes so that they can be enclosed and used for other contagious diseases at certain times of the year. These pavilions will be placed on the east side of North Brother Island, and will cost about $35,000 each.

OHIO

Medical Society Meetings.—The second annual banquet of the Starling-Ohio Medical Alumni Association of the Miami Valley was held in Dayton, November 30, under the presidency of Dr. Clifton L. Patterson, Dayton, Dr. Francis C. Gray acting as toastmaster. The following officers were elected: President, Dr. John W. Millette; vice-president, Dr. Charles W. Salisbury; secretary-treasurer, Dr. G. W. Richie, and trustee, Dr. Ned D. Goodhue.——Articles of limited partnership have been filed by Dr. George Strobach, John Rawley, and Walter M. Goodwin, Cincinnati, for the American Physicians' Protective Association. The object of the organization is to aid physicians and surgeons in the collection of their accounts, to keep them properly advised as regards non-paying patients, to eliminate fraudulent practitioners, and to keep the profession advised as to all proposed legislation.

PENNSYLVANIA

Personal.—Dr. J. Edward Nickel, who has been for the past year a member of the staff of the State Sanatorium, Mont Alto, has resigned and will resume private practice in Harrisburg.——Dr. David J. McCaa has been reelected president and Dr. John F. Mentzer, treasurer of the Ephrata Borough Board of Health.——Dr. Howard Y. Pennell has been elected secretary of the reorganized board of health of Downingtown.

Officers Elected.—At the annual meeting of the Berks County Medical Society, held in Reading, December 15, the following officers were elected: President, Dr. George W. Kehl, Reading; vice-presidents, Drs. Franklin P. Lytle, Birdsboro, and Clara S. Keiser, R[illegible]ary, Dr. Henry P. Brunner, Reading; [illegible], Dr. Ralph A. Harding, Reading; rep[illegible]fevre, Reading; censors, Drs. Daniel Longaker, Fremont W. Frankhouser and Israel Cleaver, all of Reading; curator, Dr. Harry F. Rentschler, Reading; librarian, Dr. Clara S. Keiser, Reading, and trustee, Dr. Abraham S. Raudenbush, Reading.——The Jefferson Alumni Association of Northwestern Pennsylvania held its annual meeting and banquet in Scranton, December 16. About forty-five were present, and Professors W. M. Late Coplin and John M. Fisher, of the college, were present and responded to toasts. Dr. John B. Mahon, Pittston, was elected president; Dr. Frederick L. Van Sickle, Olyphant, vice-president, and Dr. J. Norman White, Scranton, secretary.

Philadelphia

Druggists Bid on Work for Poor.—Thirty-one druggists have offered to put up prescriptions issued by the city authorities to poor persons, and their bids were opened December 14 in Director Neff's office. There was $8,000 available for this purpose this year. The basis of the charge is that the drugs are to cost the same as the prices quoted to the municipal hospitals, which is lower than the ordinary wholesale cost.

New Surgical Prize.—A precedent was established in the Medical School of the University of Pennsylvania, December 10, when the Undergraduate Medical Association endowed a surgical prize to be competed for by fourth-year medical classes, beginning 1910. All prizes, heretofore, have been founded by the faculty or alumni. The contest will be for the best essay based on observations of the University Hospital clinics in anatomy, pathology and physiology. The first prize will be $75, and the committee of judges comprises: Drs. Charles H. Frazier, John Speese, and J. Edwin Sweet.

Personal.—Dr. W. Harper Sloan was acquitted of the charge of criminal malpractice before the Court of Common Pleas, December 17.——Dr. S. Lewis Ziegler, who has been seriously ill with erysipelas, is convalescent.——Dr. Leo Loeb, assistant professor of pathology at the University of Pennsylvania, has resigned to become director of a special skin and cancer laboratory in St. Louis.——Dr. Arthur J. Davidson has been elected orthopedic surgeon to the Mathilde Adler Loeb Dispensary of the Jewish Hospital.——Dr. William Jackson Merrill has been elected assistant orthopedic surgeon to the St. Agnes Hospital.

WISCONSIN

County Society Meeting.—At the annual meeting of the Waukesha County Medical Society, held at the State Tuberculosis Sanatorium, Wales, Dr. Albert J. Hodgson, Waukesha, was elected president; Dr. Richard E. Davis, Waukesha, vice-president; Dr. Laurel E. Youmans, Mukwonago, censor; Dr. Michael R. Wilkinson, Oconomowoc, delegate to the state society, and Dr. Daniel McL. Miller, Oconomowoc, alternate.

Treatment of Rabies.—The Pasteur Institute for the treatment of those affected with rabies, recently established at the University of Wisconsin, Madison, in connection with the State Hygienic Laboratory, has had 14 patients up to Dec. 10. Dr. Mazyck P. Ravenel, professor of bacteriology at the University of Wisconsin, is in charge of the institute, and Dr. Cornelius A. Harper is making the injections. It is planned to establish a boarding-house for the patients.

GENERAL NEWS AND COMMENT

Conference on Hookworm.—The first conference on the eradication of hookworm will be held in Atlanta, Jan. 18 and 19, 1910. Delegates will be appointed to the conference from Alabama, Mississippi, South Carolina, Georgia and Florida.

Pellagra.—A special commission has been appointed, with the approval of the Secretary of the Treasury, for the investigation of pellagra. Five members are from the Public Health and Marine-Hospital Service, and two from the staff of St. Elizabeth's Insane Hospital at Washington.

Personal.—Dr. Edward C. Ellett, Memphis, Tenn., was elected chairman of the Section on Ophthalmology of the Southern Medical Association, and Dr. Urban S. Bird, Tampa, Fla., secretary.——Dr. John R. Minahan, Green Bay, Wis., has been elected president of the Association of Surgeons of the Chicago, Milwaukee and St. Paul Railway.

Resolutions Regarding Dr. Nauman.—At a recent meeting of the American Medical Association of Vienna, a resolution was adopted setting forth the high appreciation the members of the association have for Dr. Henrick Nauman of the University of Vienna as an investigator and teacher of otology. Dr. Nauman is soon to visit the United States.

Soo Line Surgeons Elect.—At the annual meeting and banquet of the Minneapolis, St. Paul and Sault Ste. Marie Railway Surgical Association, held in Minneapolis, December 16, Dr. Justus Ohage, St. Paul, was elected president; Dr. Herbert B. Crommett, Amery, Wis., vice-president; and Dr. John H. Rishmiller, Minneapolis, secretary-treasurer. The next meeting will be held in St. Paul.

Fake Drug Inspector.—A letter of warning has been sent out by the United States Department [illegible] certain individuals who are falsely [illegible] as agents of the department for the purpose of obtaining money. One John H. Kraft is specifically mentioned as an impostor, whose *modus operandi* is to call on individuals suffering from rheumatism, for whom he offers to provide treatment at a cost of fifty dollars, five dollars of which are to be paid down and the balance within five years.

No Tuberculosis Prize as Yet.—The statement in the newspapers that a prize of $100,000 has been offered to the person who discovers a cure for tuberculosis, that Yale University is custodian, and that members of the faculty of Yale Medical School are to act as trustees, is stated by Prof. Herbert E. Smith, dean of the medical faculty, to be incorrect. The possibility of securing such a fund was suggested and information was asked as to the conditions to be attached to such a prize, but aside from this conference, nothing has been done and the authorities of Yale University do not know that anything further will come of the matter.

Another Scheme to Defraud.—A correspondent from Nebraska City, Neb., calls attention to another scheme to obtain some of the earnings of the hard-working but too good-natured physician. An individual purporting to be a land agent calls on the doctor offering him a lot in a new town in some distant state, as Texas or Oklahoma, on payment of the cost of the abstract and deed ($4 to $7), the latter to be sent later. In return the physician is to speak a good word for, or furnish a list of probable investors in, the project being promoted. The physician gives up the money but the deed is *not* forthcoming.

Seaboard Physicians Meet.—At the annual meeting of the Seaboard Medical Association, held in Norfolk, Va., Dec. 7, 8, and 9, the following officers were elected: President, Dr. William T. Parrott, Kinston, N. C.; vice-presidents, Drs. Joseph Grice, Portsmouth, Va., B. H. Halsey, Suffolk, Va., and Herbert D. Walker, Elizabeth City, N. C.; secretary, Dr. J. Rainey Parker, Goldsboro, N. C.; treasurer, Dr. Israel Brown, Norfolk, Va. (reelected), and orator, Dr. Joseph H. Hiden, Pungoteague, Va. The chief addresses of the meeting were delivered by Drs. Southgate Leigh, president, Norfolk, Va., on "The Education of the Public on the Cancer Problem," by Dr. William T. Parrott, Kinston, S. C., on "The Student Doctor," and by Dr. Charles P. Wertenbaker, U. S. P. H. and M.-H. Service, on "Pellagra." Kinston, N. C., was selected as the place of meeting for 1910.

Work of the Marine Hospital Service.—The summary of transactions of the Public Health and Marine-Hospital Service for the fiscal year of 1909 shows that during the year no further cases of human plague occurred in San Francisco, but that 4 cases of rat plague were found, the last on Oct. 23, 1898. There were 156,059 rats caught, of which 93,558 were examined. In Oakland no human plague occurred until October 26, when a case was reported that had received its infection in Contra Costa county. In Los Angeles, Aug. 11, 1908, a case of human plague was discovered, and soon after an infected ground squirrel was found. No case of human plague was discovered in Seattle, but out of 48,652 rats examined, 10 were found infected. A widespread plague infection among ground squirrels was found in Contra Costa county, and up to October 30, 44,843 squirrels had been destroyed. During 1908, 111 deaths from rabies were reported, from 534 infected localities. The disease prevailed in 38 states and territories in the eastern three-fourths of the United States, but no cases were reported from the Rocky Mountain or Pacific Coast regions. The report also deals with the investigations now being pursued on pellagra and the hookworm disease. The leprosy investigation station at the Island of Molokai, for which $100,000 was appropriated, is now completed and ready for occupancy. At this station experiments on animals, in which quantities of leprosy material are required, will be carried on, but the investigation of incipient cases will be continued at the temporary laboratory in Honolulu. The problems which leprosy present include the successful growth of the lepra bacillus on artificial media, the successful inoculation of the lower animals, the discovery of a substance analogous to tuberculin to be used as a remedial or diagnostic agent, the discovery of the mechanism whereby the infection spreads from one person to another, and lesser problems that add to the knowledge of the disease, and while apparently of no great immediate importance, may indicate the path leading to the solution of the greater problems. During the year 24,657 cases of smallpox were reported with 75 deaths from 42 states, 1 territory, and the District of Columbia. The additions to the hygienic laboratory, which treble the capacity of that institution, were completed during the year and nine bulletins were issued. The publication of a series of bulletins embodying a digest of comments on the Pharmacopeia was undertaken. There were 966,124 immigrants inspected during the fiscal year, 14,536 of whom were certified for rejection on account of physical defects. At the hospital for immigrants, Ellis Island, 6,186 patients were admitted for treatment during the year. In the 21 marine hospitals owned by the government and at the 126 other stations, where seamen of the merchant marine received hospital and dispensary treatment, there were treated during the year 53,074 patients. Physical examinations were made of 4,980 persons connected with various branches of the service. The personnel of the service at the close of the fiscal year included the surgeon-general, 5 assistant surgeon-generals, 35 surgeons, 66 passed assistant surgeons, and 21 assistant surgeons. There were also 279 acting assistant surgeons and 45 pharmacists.

FOREIGN

Epidemic of Trichinosis in Spain.—The town of Jimena in Spain reports 30 cases of trichinosis in persons who had eaten the pork from a certain hog. Fourteen of the victims had died at the date of the report and trichinæ were found in the muscles.

Medal for Local Health Officer.—The town of Santa Margherita in northern Italy has recently had a medal engraved and presented to Dr. A. Alberti who for fifty years has been the local health officer, in token of appreciation of his long and devoted service to the commonwealth.

Degrees Conferred by University of Brussels.—On its seventy-fifth anniversary recently the university of Brussels conferred honorary medical degrees on Waldeyer of Berlin, Metchnikoff of Paris, the chemist E. Fischer of Berlin, and Duke Karl Theodor of Bavaria, whose death was announced a few days later.

Monument Proposed.—The town of Hilden in Germany plans to erect a monument to its greatest son, Guilelmus Fabricius, the eminent surgeon, who upheld the standard of science after the death of Ambroise Paré in France. It is desired to unveil a statue of Fabricius on the three hundred and fiftieth anniversary of his birth, June 25, 1560.

The Sanitary Aspect of the Russian Political Exiles.—Last September the two editors of the official organ of the Russian National Medical Association were arrested at Moscow for publishing a revolutionary article in their journal. They were acquitted, however, when they produced proof that the article in question was merely the publication of the answers that had been received to a question-blank sent out by the medical association to reliable men, mostly physicians, who had been exiled, inquiring of them in regard to the sanitary conditions of the "deportation system" as they had experienced them. Only 24 replies were received, and all were printed. Among the statements to which the government objected was one to the effect that innocent parties were frequently sent into exile by mistake for the one actually incriminated, and that the guards in charge of the troop of exiles mistreated them and violated the women exiles. These statements were proved true by specific instances. Dr. A. Dworetzky of Moscow writes to the *Münchener med. Wochenschrift*, Nov. 23, on the subject, relating a number of details from the various replies received to the question blanks. Only 11 of the 24 writers had been able to obtain employment in their new home; the government does not permit the exiles to teach or practice law; physicians alone are allowed to practice their profession. A monthly allowance of from $2.50 to $4.00 is given the exiles by the state—their sole support. It is a frequent practice to send exiles from the south of Russia to the far north of Siberia, where almost all soon die of tuberculosis. Medical aid is not obtainable unless one of the party happens to be a physician. In the cemetery at Kolymsk for the exiles, the graves are filled with suicides, the conditions at that terminal station wrecking the strongest nervous system.

LONDON LETTER

(From Our Regular Correspondent)

London, Dec. 11, 1909.

Damages from Hotel for Serving Typhoid Oysters

Lieutenant Cardale of the Royal Navy sued the proprietor of a hotel at Chatham where he and a friend ate oysters. After a fortnight both were taken ill with typhoid fever and the friend died. A month before, the health authorities had warned against the eating of contaminated shellfish from the Medway, the river on which Chatham is built. The jury awarded the plaintiff $1,320 damages and costs.

The Housing and Town Planning Bill

The bill for the regulation of housing and town planning, just passed, is one of the most important advances in sanitary legislation ever made in this country. Previously the building of towns was in no way regulated and property owners were able to construct new streets without any regard for the public interests. By the new act every county council is obliged to have a health officer who must devote the whole of his time to the work and therefore not engage in private practice. At present in many cases the health officer is a general practitioner who devotes only part of his time to his public work. He must be supplied with reasonable information by the health officers of the several districts in the county. According to a previous act houses let to the working classes must be in all respects fit for human habitation, but this applies only where the annual rent does not exceed $100 in London, $65 in Liverpool, $50 in Manchester and Birmingham, and $40 elsewhere. The present act extends this provision to houses with an annual rental not exceeding $200 in London, $130 in a borough or urban district, and $80 elsewhere. These new provisions will render the act applicable to practically all the working class dwellings throughout the country. According to a previous act local authorities were empowered to provide new houses for the working classes, but this clause was only in force where it had been adopted by the local authority. By the present act it is put in force in every district throughout the country. Further, if a local authority does not provide accommodation necessary for the working class of that district, the local government board may hold an inquiry and declare the local authority in default, and order them to do what is necessary. The provisions of the act with regard to town planning mark a new departure in legislation in this country. Hitherto new centers of population have been allowed to grow up and existing urban areas have been allowed to expand without control or prevision. The result has often been the haphazard development of land in the vicinity of urban centers has produced slums, prevented the orderly growth of towns, and later involved enormous expenditure in clearing sites, widening streets, and providing necessary open spaces. The act aims at securing, in the future, sanitary conditions and convenience by enabling schemes to be made under which building land will be developed with due regard for future requirements. Local authorities are empowered to prepare town planning schemes in connection with land likely to be used for building purposes or to adopt any such schemes proposed by the owners of land. But the plans must be approved by the central health authority—the local government board.

The Seventeenth International Congress of Medicine

This will be held in London in 1913. The National Committee of Great Britain and Ireland at the last congress, under the presidency of Dr. F. W. Pavy, F.R.S., will be made into a general committee to meet in February. It has been decided that the colonies are to be adequately represented.

The Medical Treatment of London School Children

As stated in previous letters the problem of providing medical treatment for London school children suffering from disease or defects which prevent or interfere with their education, now compulsory, is subject of much controversy. For economical reasons the London County Council has declined to establish school clinics, but instead has come to an arrangement with certain hospitals to treat the children. This arrangement has been censured by the British Medical Association and by medical opinion in general. The council entered into agreements with eight hospitals to provide treatment for 16,000 children suffering from disease of the eyes, ears and skin, and accepted the offer of Charing Cross Hospital to provide *x*-ray treatment for twenty-five children suffering from ringworm. It is remarkable that the council has not seen its way to provide dental treatment, as the prevalence of disease of the teeth is appalling.

PARIS LETTER

(From Our Regular Correspondent)

Paris, Dec. 10, 1909.

Proposed Tax on Mineral Waters

The proposition to tax mineral waters, which has several times been suggested in our country, has always been systematically rejected. It is probable that the same fate awaits the project of the minister of finances, who proposes to introduce a stamp-tax on mineral waters, a label bearing a guarantee being attached to each bottle. This project has called forth numerous protests, not only from merchants, but from the public. Mineral waters, are, in fact, regarded as hygienic drinks. *To augment their price is to restrict their use among* people of small means. The opponents of the tax point out, moreover, that the official guarantee stamp will have a harmful effect by conferring a sort of equality on all waters of one region and thus creating most regrettable confusion in the minds of the consumers. From the fiscal point of view, the returns from the tax will be very small, the waters subject to the tax amounting to about 30,000,000 bottles. By a tax of 1 cent (5 centimes) a bottle, only about $300,000 (1,500,000 francs) will be raised, and, moreover, the greater part of this amount will be absorbed by the expenses of collecting the tax, which is characterized by its adversaries as "the tax on public health."

An Important Prosecution for Fraud in Flour

A few days ago arguments in an important case of frauds in flour began, before the court of Limoux, department of l'Aude; 32 merchants or middlemen are implicated. The two principals are men of Italian origin settled in the vicinity of Limoux. The 30 others are merchants or brokers of Perpignan, Milhau, Valence and various other cities throughout France. The two manufacturers put on sale products of undefined composition (intended, according to their prospectuses, to whiten flour), in which analysis has revealed the presence of considerable proportion of talc. Over 200,000 pounds (100,000 kg.) have been used in adulteration of flour sold by the accused.

Freedom of Choice of a Physician by Subjects of Charity

At its recent congress, the National Association of Mayors of France passed a resolution that recipients of charity should have the privilege of selecting their physicians and pharmacists.

Measures Against the Illegal Practice of Medicine

In a preceding letter, I mentioned the case of an individual who, though without any diploma, had been able to practice medicine with impunity for several years. Public opinion was strongly aroused by this affair, and the Prime Minister has just called the attention of the mayors to the obligations which rest on them to restrict the practice of medicine to the medical profession. He has particularly recommended that they see that the diplomas of practitioners should be regularly registered within the space of a month as the law prescribes, and that students of medicine called to practice during an epidemic, or to fill a vacancy temporarily, should furnish testimonials of scholarship.

Election of Dr. Mosny to the Academy of Medicine

In the course of its session of December 8, the Academy of Medicine elected an honorary member in the section of hygiene and sanitary police. Dr. Mosny, physician of the St. Antoine Hospital and member of the consulting committee of public hygiene, was elected by 65 out of 78 votes.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, Dec. 1, 1909.

Personal

Professor Kern, heretofore subdirector of the Kaiser Wilhelm academy for army medical instruction, who has made a name for himself by the publication of a number of excellent philosophic treatises, will resign his position and will be followed by Dr. Keitel from Breslau.

Professor Wiedersheim at Freiburg has been chosen a member of the newly founded academy of sciences at Heidelberg.

Dr. Jordan, professor extraordinary for surgery at Heidelberg, a talented pupil of Professor Czerny, succumbed at the age of 45 to a recurrence of a mediastinal tumor.

Professor Kraft, formerly conductor of Brehmer's sanatorium at Görbersdorf has taken the directorship of Lahmann's sanatorium, "The White Stag" (*Weissenhirsch*) in place of Professor v. Düring.

Infant Mortality at Charlottenburg

The efforts of our neighboring city Charlottenburg to reduce infant mortality show some success for 1908. The mortality of children for first year of life reckoned for 100 living amounts to 12.5. The following figures show the gradual reduction of mortality in Charlottenburg. For 1880: 33.67; 1885: 28.75; 1890: 25; 1895: 22.60; 1906: 14.16 for 100 born living.

Medical Certificates for Candidates for Matrimony

A petition has been presented to the federal council (*Bundesrat*) and the Reichstag which proposes as a supplement to the legal requirements for marriage license that both of the engaged persons shall present the certificate of a licensed physician, stating that he has been consulted medically by both parties with reference to the contemplated marriage. In this way the result will be reached that those who contemplate marriage will be informed regarding their state of health without any restraint being placed on their free choice in other respects. The petition is founded on the idea that the essential necessity of health in the parties to a marriage should be brought to the consciousness of the public. By the proposed legal regulation many weak and diseased persons would be restrained from matrimony. In this way the previous annual increase of population would be diminished, to be sure, but only to the benefit of the public, for the condition of health would be gradually improved. It is not to be denied that the fundamental idea of this petition is correct. It is very much to be wished that those who desire to enter the marriage state should recognize the duty to inform themselves regarding the health of each other quite as much as regarding the financial relation and other fundamental requisites of a satisfactory marriage. Every physician can cite examples of the carelessness in regard to health with which marriage is often contracted and what serious consequences arise from this neglect.

Tuberculosis Mortality for 1908

According to the latest official information 33,205 men and 30,115 women died of tuberculosis in Prussia in 1908. Reckoned for 10,000 living, this gives for 1908 a proportion of 16.46. This figure is the smallest (except for the year 1906) which has been reached since 1875 when the first Prussian statistics were published. In 1875 the entire number of those who died of tuberculosis in the kingdom of Prussia was 82,122 or 31.9 per 10,000. The reduction in the absolute number of deaths from tuberculosis is the more remarkable in consideration of the steady increase in population. In 1908 the population amounted to 38,473,129.

Improvement of Village Hygiene

In order to improve the hygiene of the villages which is for the most part in a sad condition, so-called prizes for cleanliness have been founded in certain districts of Alsace which are annually distributed to the villages which have best fulfilled the conditions for that year. Of ten communes which announced themselves for the competition this year, one village obtained the first prize of $250 (1,000 marks) and two communes shared the second prize, $125; in addition each of the three communes received a diploma.

Care for Alcoholic Patients

For about fifty years efforts have been made in Germany to improve the moral and physical condition of those addicted to drink by treatment in inebriate asylums (*Trinkerheilanstalten*) and to restore them to self support. The first of these benevolent establishments was founded by the evangelical deaconess institute of Duisburg in the little Rhenish city of Lintorf. At present there are in Germany 47 inebriate asylums with 1,429 beds in all. Among them are 10 private sanatoria and 6 institutions which receive other patients in addition to alcoholics. In the remaining 31 public institutions about 15,000 patients were received in 1907. Moreover according to official statistics about 12,000 patients with chronic alcoholism were treated annually from 1877 to 1901 in the general hospitals of Germany. If the first three years, 1877 to 1879, inclusive are compared with the last four years, 1898 to 1901, an increase of the annual average of cases of chronic alcoholism from 5,240 to 18,207 is seen. While it must be admitted that with the increase in the number of hospitals and with the decrease in the public dread of such institutions, proportionally more patients undergo treatment in the hospitals, yet on the other hand, it is apparent from the figures given that a very undesirable growth of chronic alcoholism has occurred and it must be concluded that the number of inebriate asylums and the care for inebriety in general are not yet as advanced as is desirable. The newly founded bureau for the instruction and care of alcoholic patients will supply a need in this direction.

The Russian Consultation Bureau

The affair of the Russian consultation bureau which I have repeatedly treated in previous letters, i. e., the charges raised against a number of Berlin professors of paying Russian interpreters and agents for the introduction of Russian patients has reached a termination for some of the affected persons. The physician who brought the whole affair into public notice requested an investigation by the medical court of honor for himself on account of the complaints raised that he had carelessly impugned the honor of his colleagues without sufficient grounds. He was acquitted, the court deciding that his suspicions were not baseless. It appears to be established that several physicians and professors were guilty. Certain accused professors, however, against whom a disciplinary process had been instituted by the department of education have been acquitted of every charge as the official preliminary investigation has shown that there was no sufficient ground for official interference. This result concerns Professors v. Leyden, Ewald, and Senator. The two last named had resigned their offices in the Berlin Medical Society on account of the charges (the first that of librarian, the latter that of the first president). The new election was postponed till the situation should be cleared. Now a new election has occurred and as was to be expected Senator was reestablished. On the other hand to our astonishment Ewald was not re-elected. This most regrettable affair has been settled in a satisfactory manner at least so far as the three accused professors are concerned. It seems, however, that the official process begun against some other professors is to take its course and it is the impression that they will not escape punishment entirely.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Dec. 2, 1909.

Dangerous Trades

In the course of a trial against a firm of celluloid-makers medical experts were heard with a view to ascertaining the dangers of this trade and the best means of preventing accidents. In the case in question a fire broke out on the premises, which were not at all fit for this kind of work; the arrangements for ventilation and removal of celluloid dust were especially unsatisfactory and eighteen persons were suffocated by the poisonous gases before they could escape. As the trade is developing very much lately in this country and several serious accidents occurred, medical societies took the question up and presented a memorandum to the board of trade urging the cooperation of medical men with technical experts being made obligatory in all such manufactories. It has been estimated that the risk run by the laborers in this trade is equaled only by that incurred by the makers of phosphorus matches, but in the latter case slow chronic disablement is produced; in the case of the celluloid workers a quick death ensues. Another point emphasized in the medical memorandum is danger in the employment of juveniles in this trade because of the natural carelessness and the lack of experience among boys and girls of 15 to 17 years. The medical action has been commented on very favorably by the lay press.

Another danger to public health has been brought to the notice of the board of trade by a private action of firms on the occasion of the death of a very influential banker in Vienna, who was said to have been poisoned by the tapestry in his office. Post-mortem examination showed that antimony and arsenic had been inhaled for a long time by the unfortunate money magnate. The only source of the poisonous substances found was traced to the imported heavy tapestry, said to come from England, which was used lavishly in the offices of the bank. Some twenty years ago, wall-paper containing a trace of arsenic in the bright green and red colors was used extensively in this country, and when some deaths were caused by these paper-hangings, its use was forbidden. Nevertheless, strict inspection of the stock in the hands of the firms trading with material for wall-papering was at once instituted recently in order to assure the public that no danger was threatening. This insight into the relation between public health and business is largely due to the presence of a few level-headed men of our profession on the board of health. In this country of the unexpected it is not at all a matter of course that a board of health should comprise any medical men. At all events, attention was directed recently to the necessity of protecting the population against unscrupulous money-making by certain trades at the risk of the health of the consumers.

The Transactions of the Meeting of the Austrian Medical Councils

At the meeting of the above-mentioned bodies which has become a yearly institution welcomed by the profession, several important decisions were adopted. Dr. Grün read a paper on quackery, pointing out that lately several cases of acquittal of quacks had occurred in spite of the proved menace to public health that this meant. The position of the medical profession was seriously compromised unless this condition of the present attitude of the courts was changed. The law was rather elastic on this point. Therefore, he recommended the following amendment to the quackery act to be considered by the meeting. "Whoever undertakes to treat or treats continually, with or without payment, one or more persons, without possessing an inland university medical diploma, or a foreign recognized degree, is guilty of an offence against the law, unless he can prove that his immediate interference was the means of saving the life of the affected person. The penalty inflicted should not be less than one month, and not more than three months' imprisonment."

Several articles of the proposed new *Aerzte Ordnung*, or medical act, were severely criticized which will be discussed shortly in the parliament. Dr. Gruss showed that throughout the entire act the medical practitioner has been put under heavy obligations without receiving an equivalent of rights. Thus the law requires the doctor to report certain diseases, all cases of trauma, of injury, and attempts at suicide, while it does not protect him against claims by patients arising out of his complying with these requirements of the law.

Another point much discussed was the question of specialists. Dr. Löwenstein moved the following resolution: "The titles obtained from an appointment by the state or a municipal institute may be used by the holders of these posts only, and must be relinquished when the appointments cease. A doctor may call himself specialist only after having served at least one year at a special department of a hospital and if he adopts this title, he may not practice anything else but his specialty. If several special branches of the profession belong together, these may be united; local requirements may necessitate the combination of different branches. Such combinations will have to be recognized by the local medical council."

Correspondence

Davis Memorial Fund

To the Editor:—The committee appointed to secure funds for the Davis memorial feels assured that the medical profession is in a large degree ignorant of its scope and purpose. This committee was appointed at the Portland session of the Association and at once organized in the expectation of securing the fund promptly.

The national disaster caused by the destruction of San Francisco induced the committee to defer its work in the interest of the medical profession of California. The financial crisis of two years ago was sufficient reason for causing a still further delay. The committee thinks that the time has now arrived for pushing its work to a completion. The committee has requested of the various state societies to take this matter actively in hand and name the sum which seems to them an equitable apportionment. The committee has suggested that half of the respective sums be furnished by a vote of the society, thus causing indirectly the enrolment of every member of the profession in contributing toward this worthy object. The committee feels sure that the other half of this apportionment will be gladly furnished by private subscription, as a privilege rather than a burden. This plan was adopted in Massachusetts and on a personal appeal of the chairman the subscription greatly exceeded the sum allotted. We feel assured that an effort of this sort, inaugurated by the officers of the state medical societies, will be successful. The committee urges the different state organizations to complete their subscriptions without further delay, knowing that the great body of the medical profession feels a debt of gratitude which can be publicly expressed only in this way.

We would ask every reader of The Journal to take up this matter actively with the officers of the state society. The funds should be forwarded to Dr. Frank Billings, treasurer of the American Medical Association, 100 State Street, Chicago.

Henry O. Marcy, Chairman of the Committee, Boston.

Pharmacology

Radical Revision of the Pharmacopeia

It is interesting to note that pharmacists are moving in the direction of a radical revision of the Pharmacopeia. At the May meeting of the Baltimore branch of the American Pharmaceutical Association the following resolutions were offered and accepted for future discussion:

> *Resolved,* That it is the sense of the Baltimore Branch of the American Pharmaceutical Association that the Ninth Revision of the U. S. Pharmacopeia should not contain formulas for compound preparations and should present matter relating to simples and preparations of simples, only; that the National Formulary should contain only such formulas for compound preparations as are consistent with prevailing advanced knowledge of chemistry, pharmacology, pharmacy and therapeutics and that all titles therein contained should be true to content and in accord with accepted medical and pharmaceutical ethics. It is further
>
> *Resolved,* That the parent body be requested to consider the advisability of publishing a General Receipt Book, with frequent supplements, to contain all formulas dropped from the U. S. P. and N. F., and such other formulas as may be useful to pharmacists.

Mr. H. P. Hynson, a pharmacist of Baltimore, discusses these resolutions in a recent paper (*Bull. Am. Phar. Assn.,* November, 1909) in which he says that the effect of such a rule would be to dismiss about 40 articles from the Pharmacopeia, or 3 per cent. of the pharmacopeial titles, relegating them to the National Formulary. For instance: Cataplasm of kaolin, antiseptic solution, and the compound acetanilid powder would not be admitted, and compound mixture of glycyrrhiza, compound syrup of sarsaparilla and some other well-known mixtures would have to be dismissed. A broad construction of the resolution would not necessitate the dismissal of preparations in which a small amount of another substance is added for the purpose of effecting solution, but slight changes should be made in the titles and formulas, whereby such preparations might be made to comply with the new rule. Solution of iodin in solution of potassium iodid of sufficient strength need not be called compound solution of iodin.

He thinks that it would not be wise to offer argument on either side at the present time. "The whole subject, however, will be more clearly considered," he says, "if we fix in our minds just what the pharmacopeia of to-day should be. Is it to be an authority as to standards, alone; standards of identity characteristics; standards of pharmacodynamic or adjuvant worth; standards of relative potency, or is it to be a book of both standards and suggestions? Its chemistry and pharmacy must be beyond reasonable question, but it can scarcely presume to establish therapeutic standards or even attempt to do so, when so little has been done to make such standards possible."

The proposition is one of considerable importance and may be taken as pointing to a distinction to be made between the Pharmacopeia and the National Formulary. It is questionable if the dismissal of compound formulas from the Pharmacopeia would be desirable if there were no other official standard book. As the National Formulary has been in a sense legally recognized and is now generally accepted as containing official preparations, there could be no objection to assigning all compound mixtures to that book. This would logically involve the authorization of the National Formulary by the same representatives of the medical and pharmaceutical professions as now determine the character of the Pharmacopeia. Or if this is not feasible and it is deemed advisable to continue the work as a publication of the American Pharmaceutical Association, the value of the book might be enhanced if physicians should cooperate in its preparation.

The Public Service

Medical Corps of the Navy

Changes for the week ended Dec. 18, 1909:

Benton, F. L., surgeon, detached from the *Franklin* and ordered to the *Prairie.*

Shippen, L. P., asst.-surgeon, detached from the Naval Prison, Portsmouth, N. H., and ordered to the *Prairie.*

Steep, J., P. A. surgeon, detached from the Naval Station, Newport, R. I., and ordered to the *Franklin.*

Baker, M. C., asst.-surgeon, detached from the *Ohio* and ordered to the Naval Recruiting Station, Cincinnati.

Clifton, A. L., asst.-surgeon, detached from the Naval Recruiting Station, Cincinnati, and ordered to duty in connection with the fitting out of the *Michigan* and to duty on board that vessel when placed in commission.

Public Health and Marine-Hospital Service

List of changes for the seven days ended Dec. 15, 1909:

White, J. H., surgeon, granted 8 days' leave of absence from Dec. 11, 1909.

Stoner, J. B., surgeon, on being relieved by P. A. Surgeon R. H. Creel, directed to proceed to Port Townsend, Wash., and assume command.

Blue, Rupert, surgeon, granted 4 months' leave of absence from Jan. 1, 1910, with permission to go beyond the seas.

Lavinder, C. H., P. A. surgeon, granted 4 days' leave of absence from Dec. 13, 1909, under paragraph 191, Service Regulations.

Lumsden, L. L., P. A. surgeon, granted 7 days' leave of absence from Nov. 29, 1909, under paragraph 191, Service Regulations.

Corput, G. M., P. A. surgeon, granted 16 days' leave of absence from Dec. 15, 1909.

Korn, W. A., P. A. surgeon, granted 1 day's leave of absence, Dec. 22, 1909.

Schereschewsky, J. A., P. A. surgeon, granted 5 days' leave of absence, under paragraph 191, Service Regulations.

Wille, C. W., P. A. surgeon, granted 2 days' leave of absence from Dec. 8, 1909.

Francis, Edward, P. A. surgeon, granted 6 days' leave of absence from Dec. 6, 1909, under paragraph 191, Service Regulations.

Creel, R. H., P. A. surgeon, relieved from duty at Baltimore and directed to proceed to Evansville, Ind., and assume temporary command. Granted 1 day's leave of absence en route to station.

Pettyjohn, Joseph, P. A. surgeon, relieved from duty at San Francisco and directed to proceed to New Orleans and report to the medical officer in command for duty and assignment to quarters. Granted 1 month's leave of absence en route to station.

de Valin, Hugh, P. A. surgeon, directed to proceed to Washington, D. C., and report to the Director of the Hygienic Laboratory for temporary duty.

Hunt, [illegible] nic Laboratory, de[illegible] Association for the [illegible], to be held in Bosto[illegible] ary 1.

Altree, G. H., acting asst.-surgeon, granted 4 days' leave of absence from Nov. 2, 1909, without pay.

Bailey, C. A., acting asst.-surgeon, granted 20 days' leave of absence from Dec. 12, 1909.

Branham, H. M., acting asst.-surgeon, granted 3 days' leave of absence from Dec. 15, 1909, without pay.

Foster, S. B., acting asst.-surgeon, granted 22 days' leave of absence from Dec. 10, 1909.

Safford, M. V., acting asst.-surgeon, granted 7 days' leave of absence from Dec. 7, 1909, under paragraph 210, Service Regulations.

Watson, H. J., acting asst.-surgeon, granted 19 days' leave of absence from Dec. 13, 1909.

BOARD CONVENED

Board of medical officers convened to meet at Montreal, Canada, Dec. 6, 1909, for the purpose of examining an alien. Detail for the board: Passed Assistant Surgeon Eugene H. Mullan, chairman; Acting Assistant Surgeon C. K. Russel; Acting Assistant Surgeon Handsford McKee, recorder.

Health Reports

The following have been reported to the Public Health Service, during the week ended Dec. 17, 1909:

SMALLPOX—UNITED STATES

Alabama: Montgomery, Nov. 20-27, 23 cases.
California: San Francisco, Nov. 20-27, 1 case.
Colorado: Fruita, Nov. 20-27, 8 cases.
Connecticut: Stamford, Nov. 1-30, 1 case.
Indiana: Marion, Nov. 27-Dec. 4, 1 case; South Bend, Nov. 23-30, 4 cases.
Kansas: Independence, Nov. 27-Dec.4, 2 cases.
Louisiana: New Orleans, Nov. 27-Dec. 4, 1 case.
Michigan. Bay City, Nov. 28-Dec. 4, 3 cases.
Minnesota: Duluth, Nov. 20-Dec. 4, 4 cases.
Mississippi: Brookhaven, Oct. 30-Nov. 6, 1 case; Natchez, Nov. 20-27, 5 cases.
Missouri: St. Louis, Nov. 27-Dec. 4, 3 cases.
Montana: Stevensville, Nov. 20-27, 1 case.
North Carolina: Charlotte, Nov. 20-Dec. 4, 8 cases; Hickory, Oct. 30-Nov. 6, 1 case; Nov. 20-27, 3 cases.
Ohio: Dayton, Nov. 20-Dec. 4, 6 cases, 1 death.
Tennessee: Memphis, Nov. 20-27, 2 cases; Nashville, Nov. 27-Dec. 4, 1 case.
Texas: Paris, Nov. 20-27, 29 cases.
Vermont: Smithfield, Nov. 20-27, 1 case.
Wisconsin, La Crosse, Nov. 20-27, 1 case; Superior, 1 case.

SMALLPOX—INSULAR

Porto Rico, Nov. 1-30, 10 deaths.

SMALLPOX—FOREIGN

Brazil: Bahia, Oct. 22-Nov. 5, 32 cases, 26 deaths; Rio de Janeiro, Oct. 24-Nov. 1, 3 cases.
Chile: Valparaiso, Oct. 30-Nov. 6, present.
India: Bombay, Nov. 2-9, 1 death; Madras, Oct. 23-29, 1 death; Rangoon, Oct. 16-23, 1 death.
Indo-China: Saigon, Oct. 16-23, 1 case, 1 death.
Italy, general, Nov. 14-21, 16 cases; Naples. 6 cases, 2 deaths; Turin, Oct. 21-28, 1 case.
Java: Batavia, Oct. 16-23, 5 cases, 1 death.
Mexico: Aguascalientes, Nov. 14-21, 3 deaths; Chihuahua, 1 case; Mexico City, Oct. 30-Nov. 6, 1 death; Monterey, Nov. 21-28, 1 death.
Portugal: Lisbon, Nov. 13-20, 11 cases.
Russia; Libau, Nov. 7-14, 5 cases, 1 death; Moscow, Oct. 23-Nov. 6, 4 cases, 1 death; Odessa, Oct. 23-Nov. 13, 19 cases, 4 deaths; Riga, Oct. 23-30, 7 cases; St. Petersburg, Oct. 5-Nov. 13, 94 cases, 36 deaths; Warsaw, Sept. 18-Oct. 9. 10 deaths.
Spain: Almeria, Oct. 1-31, 3 deaths; Barcelona, Nov. 8-22, 2 deaths; Valencia, Oct. 23-30, 1 case.
Straits Settlements: Singapore, Oct. 9-16, 1 death.
Tripoli: Tripoli, Oct. 31-Nov. 13, 7 cases.

YELLOW FEVER

Brazil: Manaos, Nov. 6-13, 1 death; Para, Nov. 6-20, 6 cases, 3 deaths.
Ecuador: Guayaquil, Oct. 31-Nov. 13, 8 deaths.
Mexico: Merida, Nov. 29, 1 case; Peto, Nov. 26, 1 case.

CHOLERA

India: Bombay, Oct. 27-Nov. 9, 4 deaths; Calcutta, Oct. 9-16, 7 deaths; Oct. 23-30, 9 deaths; Rangoon, Oct. 16-30, 7 deaths.
Japan: Osaka, Nov. 17, 1 case.
Java: Batavia, Oct. 26, present.
Manchuria: Dalny, Oct. 9-16, 2 deaths; Oct. 25-Nov. 1, 2 deaths.
Russia in Asia: Vladivostok, Sept. 22-Oct. 21, 115 cases, 83 deaths.
Russia in Europe, general, Oct. 31-Nov. 6, 172 cases, 78 deaths; St. Petersburg, 81 cases, 20 deaths; St. Petersburg, government, 22 cases, 11 deaths.

PLAGUE

Brazil: Bahia, Oct. 22-Nov. 5, 7 cases, 3 deaths; Rio de Janeiro, Oct. 25-Nov. 1, 2 cases.
China: Hankow, Dec. 7, present.
Ecuador: Guayaquil, Oct. 9-23, 21 deaths; Oct. 30-Nov. 13, 34 deaths.
India, general, Oct. 23-30, 4,287 cases, 3,456 deaths; Bombay, Oct. 27-Nov. 9, 11 deaths; Calcutta, Oct. 9-16, 5 deaths; Oct. 23-30, 10 deaths; Rangoon, Oct. 16-30, 6 deaths.
Indo-China: Saigon, Oct. 9-23, 5 cases, 5 deaths.
Japan: Kobe, Nov. 17, present; Osaka, Nov. 17, 1 case.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DENATURED ALCOHOL

To the Editor:—Please tell me what denatured alcohol is, its chemical composition, uses, etc. R. F. LISCHER, Mascoutah, Ill.

ANSWER.—Denatured alcohol is alcohol to which has been added certain materials which destroy its character as a beverage and render it unfit for liquid medicinal purposes, but which do not prevent its employment for industrial purposes. Denatured alcohol is exempt from the internal revenue tax laid on ordinary alcohol, and is sometimes called tax-free alcohol. Under authority of an act of Congress passed in 1907, the Commissioner of Internal Revenue has prescribed that for general purposes alcohol known as completely denatured alcohol must be prepared by either of the following formulas:

1. To every 100 gallons ethyl alcohol (of not less than 180 degrees proof) there shall be added 10 gallons of approved methyl alcohol and one-half gallon of approved benzin.

2. To every 100 gallons of ethyl alcohol (of not less than 180 degrees proof) there shall be added two gallons of approved methyl alcohol, and one-half gallon of approved pyridin bases.

The methyl alcohol, benzin, and pyridin intended for use as denaturants must be submitted for chemical test and must conform to certain specifications. In cases in which the above named substances would render the alcohol unfit for certain industrial uses special denaturants have been authorized.

Tax-free alcohol can be economically used as a fuel or for power in place of gasoline and is used mechanically as a solvent, etc., in various trades. In manufacturing, alcohol is employed in the production of a number of extensively used chemicals, such as ether, chloroform, acetic ether, etc. It finds extensive application in the manufacture of varnishes, photographic dry plates, embalming fluid, lacquers, pastes and varnishes from soluble cotton, thermometer and barometer tubes, celluloid, transparent soap, photoengravings, fulminate of mercury, watches, purified rubber, imitation leather, and for many other purposes.

Book Notices

MEDICAL JURISPRUDENCE, FORENSIC MEDICINE AND TOXICOLOGY. By R. A. Witthaus, A.M., M.D., Professor of Chemistry, Medical Jurisprudence, and Toxicology in Cornell University and Tracy C. Becker, A.B., LL.B., Counsellor at Law, Professor of Criminal Law and Medical Jurisprudence in University of Buffalo, with the collaboration of various authors. Second Edition. Cloth. Vol. III. Pp. 982, with illustrations. Price, $6 per vol. Sold by Subscription only. New York: William Wood & Co., 1909.

The third volume of this handbook treats of the medicolegal relations of the special senses, of insanity and mental unsoundness of marriage and divorce, of the *x*-rays, and of blood, and other stains and of the hair. The medicolegal relations of insurance also receive a special chapter. The volume is introduced by an extensive list of cases cited in the volume. As in the previous volumes, the work is painstaking and exhaustive. Insanity is treated in two articles, one by E. D. Fisher from a medical point of view and the other by T. C. Becker and C. A. Boston from the legal side. The latter article discusses the relations of mental unsoundness to testamentary capacity and to contracts and other business relations as well as to criminal responsibility. The statutes relating to the care and custody of incompetent persons are given in a separate article. The scientific portion of the book, including *x*-ray examinations and the examination of blood, semen, hair, etc., is well executed and well illustrated. The work terminates with an index to the first three volumes. This volume forms a very important part of this valuable work and it is to be hoped that the succeeding volume will sustain the high standard already set.

PYE'S SURGICAL ion. Revised and
Largely Rewritten b B.A., M.B., B.C.,
F.R.C.S., Surgeon-in-C . Mary's Hospital.
Cloth. Pp. 576, with , 4 net. New York:
E. B. Treat & Co., 1909.

The standard work of the late Walter Pye, which has gone through several editions, has been revised and largely rewritten. The editor has brought up to date the description, details and application of treatment occurring in surgical practice, at the same time maintaining in great measure the character and style adopted by the original author.

Manual of Diseases of the Ear. By Thomas Barr, M.D., Lecturer on Diseases of the Ear, Glasgow University, and J. Stoddart Barr, M.B., Ch.B., Assistant to Lecturer on Diseases of the Ear, Glasgow University. Fourth Edition. Cloth. Pp. 477, with Illustrations. Price, $4.50. New York: The Macmillan Co., 1909.

This book has been largely rewritten, with the aid of J. Stoddart Barr, son of the senior author. It is intended for students, and fulfils its purpose by being short and crisp, but withal really comprehensive and up to date. It presents the characteristics of the better class of books written by English authors in omitting most of the considerations which are not yet ripe for immediate practical application and giving almost exclusively and in a categorical fashion the authors' own views and therapeutic directions. It must, however, be granted that a full familiarity with the literature and current views of others is shown. It is pleasing reading, and can be recommended as a work for the student or for brief references, but not for those who seek fuller details.

An Introduction to Chemical Analysis for Students of Medicine, Pharmacy and Dentistry. By Elbert W. Rockwood, M.D., Ph.D., Professor of Chemistry and Toxicology and Head of Department of Chemistry in the University of Iowa. Cloth. Third Edition. Pp. 241, with 20 illustrations. Price, $1.50. Philadelphia: P. Blakiston's Son & Co., 1909.

The facts of physical chemistry have been freely utilized in this work and ionic explanations given to the analytical reactions. The work is well adapted to the instruction of the medical student who needs in his study of analytical chemistry, not so much to become an expert analyst as to gain a clear insight into the principles of chemistry and sufficient technic to fit him for the simple analytical work which he may have occasion to undertake in his practice. Sufficient quantitative work is given to familiarize the student with some volumetric methods; and some special work in toxicology and sanitary chemistry complete the volume. This work ought to prove very acceptable to teachers of chemistry in medical schools or to students in college preparing for medicine.

Quain's Elements of Anatomy. Editors, Edward Albert Schäfer,
LL.D., Sc.D., F ... y and Histology in the
University of ... ton, M.D., F.R.S., Pro-
fessor of Anato ... of Belfast, and Thomas
Hastie Bryce, ... tomy in the University
of Glasgow. ... Neurology. By E. A.
Schäfer and J. ... taining the Descriptive
Anatomy of th ... the Organs of Special
Sense. Elevent ... with Illustrations. Price,
15 shillings net ... reen & Co., 1909.

This volume contains the descriptive anatomy of the peripheral nerves and of the special sense organs. The portion of the book dealing with macroscopic anatomy has been written by Prof. Johnson Symington and the microscopic portion by Professor Schäfer. This edition contains much new matter and a large number of new illustrations, including many original drawings by Prof. Ramon y Cajal. The principal new matter is in the portion devoted to microscopic anatomy, the description of the gross anatomy of the cerebrospinal nerves and their distribution being naturally more conventional. The section devoted to special sense organs is particularly good, especially the chapters on the eye and ear. The plan of issuing the work in small and convenient sections is convenient, especially for students.

The Practical Medicine Series. Under the General Editorial Charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Vol. VII, Pediatrics, Edited by Isaac A. Abt, M.D., Assistant Professor of Medicine (Pediatrics Department), Rush Medical College, with the Collaborations of May Michael, M.D., Orthopedic Surgery, Edited by John Ridlon, A.M., M.D., Professor of Orthopedic Surgery, Northwestern University Medical School, with the Collaboration of A. Steindler, M.D. Cloth. Pp. 234. Price, $1.25. Chicago: The Year Book Publishers.

This volume, intended for the general practitioner, gives a review of the year's literature of the world on the subjects of pediatrics and orthopedic surgery. Under pediatrics, the subject of hygiene and dietetics are especially well represented. Completeness is given to the dietetic section by a translation of an article by Prof. E. Feer, which is credited to the *Bulletin of the Chicago School of Sanitary Science*, July 31, 1909. It comprises eighteen pages in the book and reviews the whole subject in an admirable way. Like the other numbers of the series, this volume will provide the general practitioner with a valuable summary of the year's progress in this special subject.

Sechsundachtzigster Jahres-Bericht der Schlesischen
Gesellschaft für ... Enthält den General-
bericht über die ... der Gesellschaft im
Jahre 1908. Pap ... Buchhandlung, 1909.

This Silesian society comprises various sections, of which the medical is of the most interest to the physician. The report of the sessions of the medical section begins with an address by Professor Hürthle on the occasion of the unveiling of a bust of Purkinje, giving an account of the life and scientific activities of Purkinje. Among the other notable articles is one by A. Peiser on the therapy of sarcoma and another on the same subject by Goebel, a discussion on the pathology and therapy of chronic cardiospasm by Gottstein, a paper on the pathology of adrenal tumors by Winkler, and a review of the progress in our knowledge of syphilis by A. Neisser.

Marriages

A. R. L. Dohme, M.D., Baltimore, Md., to Miss Paula Carl, at Boston, November 22.

William Emil Durr, M.D., to Mrs. Adeline B. Fink, both of Milwaukee, November 25.

Ella K. Dearborn, M.D., and Arthur G. Herald, both of Portland, Ore., December 1.

David W. Walley, M.D., to Miss Rosa Alperque, both of Richton, Miss., December 12.

George Frederick Reinhardt, M.D., to Miss Aurelia Henry, both of Berkeley, Cal., recently.

Herman Gross, M.D., Metuchen, N. J., to Miss Goldie Altman, of New York City, December 1.

Leland O. Mauldin, M.D., Greenville, S. C., to Miss Carrie Mason Floyd of Woodruff, S. C., October 27.

Edgar H. Lancaster, M.D., Houston, Texas, to Miss Ellen Waggoner, of Austin, Texas, December 2.

Thomas Morris Chaney, Jr., M.D., Old Fort, N. C., to Miss Myrtle McComless, at Asheville, N. C., December 9.

Hal Clarke Smith, M.D., Sunnyside, Neb., to Miss Bertie Isabelle Wilson of Long Pine, Neb., at Omaha, December 1.

Deaths

Frank W. Reilly, M.D. Northwestern University Medical School, Chicago, 1861; Illinois Army Board, 1861; a member of the American Medical Association, American Public Health Association, and Chicago Academy of Medicine; assistant Health Commissioner of Chicago; veteran of the Civil War; pioneer sanitarian and editor; died at his home in Chicago, December 16, from arteriosclerosis and cerebral hemorrhage, aged 73. He was a native of England, and after studying in the Medical College of the State of South Carolina, Charleston, and Rush Medical College, Chicago, graduated from Chicago Medical College, and served that institution as demonstrator of anatomy. At the outbreak of the Civil War he enlisted as a volunteer surgeon and was seriously wounded at the battle of Shiloh; he later served as assistant surgeon of the Forty-fifth Illinois Volunteer Infantry and surgeon of the Twenty-sixth. From 1867 to 1873 he was sanitary inspector and assistant commissioner of the Chicago Health Department; and then entered the United States Public Health and Marine-Hospital Service. After the yellow fever epidemic in Memphis, he was made sanitary inspector of the National Board of Health, and placed in charge of the sanitary regeneration of the city, and of the Mississippi Valley. In 1881 he was made a member of the Illinois State Board of Health, and four years later became an editorial writer on the Chicago *Morning News*, and then was made managing editor. In 1891, he was again appointed a member of the Illinois State Board of Health, and was made its secretary, and three years later he reentered the Chicago Health Department and was made assistant commissioner of health in 1895. In 1873, while assistant commissioner of health, he served as editor of a monthly magazine called *Hygiene*, in which he inaugurated and urged a national campaign for health and hygiene. He was one of the committee of three who directed the educational campaign for a pure water supply, which established the feasibility of the drainage channel. He conceived and carried out the idea of publishing a weekly health bulletin, containing facts about the mortality and morbidity of Chicago, and setting forth the simpler lessons of public hygiene for the education of the public in the prevention of disease. While he was assistant secretary of the State Board of Health, the medical practice act of the state was put in force. Along the lines of sanitation and preventive medicine, Dr. Reilly's achievements were most noteworthy; and his services to public health have been of inestimable value to the city, state and nation.

Ferdinand Charles Valentine, M.D. Missouri Medical College, St. Louis, 1876; a member of the American Medical Association and a well-known specialist in genitourinary diseases, of New York City; died at his home in Belle Harbor, L. I., December 13, from arteriosclerosis and cardiac dilatation, aged 58. He was a native of Havenstadt Leer, Hanover, Germany. After his graduation from Missouri Medical College, he received a degree in medicine from the University of Guatemala, C. A., in 1879, and became a member of the Medical faculty of Guatemala, San Salvador and Honduras, and was for nine years surgeon general of the latter republic. He was emeritus professor of genitourinary diseases in the New York School for Clinical Medicine, and consulting genitourinary surgeon to the Manhattan State and Red Cross hospitals.

James Louis Harrington, M.D. University Medical College of Kansas City, Mo., 1889; a member of the Missouri State Medical Association; instructor in clinical genitourinary surgery in the School of Medicine in the University of Kansas; secretary of the Kansas City Post Graduate Medical College and Hospital since its organization; died at his home in Kansas City, December 8, from heart disease, aged 42. At his funeral the faculty of the Post Graduate Hospital Medical School attended in a body.

Albert Henry Blanchard, M.D. Harvard Medical School, Boston, 1851; a member of the Massachusetts Medical Society; surgeon of the Forty-first Massachusetts Volunteer Infantry and Third Massachusetts Volunteer Cavalry during the Civil War; for nearly 40 years a member of the school committee of Sherborn, and for most of that time its secretary; died at his home, December 5, aged 81.

Charles Henry Bogman, M.D. Jefferson Medical College, Philadelphia, 1871; a veteran of the Civil War; from 1874 to 1881, surgeon of the Union Pacific Railroad at Winnemucca, Nev., and surgeon general of Nevada on the staff of Governor Kincaid; died at his home in Zanesville, Ohio, December 6, from heart disease, aged 66.

David Todd Stuart, M.D. University of Virginia, Charlottesville, 1901; formerly a member of the American Medical Association, and a resident of Paducah; a medical missionary of Soo Chow, China; died November 6, near that city, from an accidental gunshot wound, while hunting, aged 31.

Frank E. Dewey, M.D. University of Buffalo, N. Y., 1873; of Peterboro; a member of the Medical Society of the State of New York; formerly health officer of the town of Smithfield; coroner of Madison county; died suddenly in Oneida, December 6, from heart disease, aged 60.

Robert Earle Conklin, M.D. College of Physicians and Surgeons, Chicago, 1905; a member of the American Medical Association; coroner of Harlan county, Neb.; died at his home in Alma, December 12, from an overdose of atropin, accidentally administered by a nurse, aged 31.

William Newton Klase, M.D. Medical College of Virginia, Richmond, 1889; a member of the American Medical Association; for two years chief examiner of a life insurance company in Cincinnati; died at his home in Carbondale, W. Va., November 26, aged 57.

Thomas Norton, M.D. Long Island College Hospital, Brooklyn, N. Y., 1878; formerly a member of the American Medical Association; a member of the Medical Society of the State of California; died at his home in San Luis Obispo, Cal., October 30, aged 63.

Chauncey Z. Williams, M.D. Tulane University, New Orleans, La., 1890; a member of the Louisiana State Medical Society, and mayor of Covington for nearly fourteen years; died in the New Orleans Sanitarium, December 6, after a surgical operation, aged 44.

George F. Keiper, M.D. Rush Medical College, Chicago, 1865; formerly a member of the state legislature of Nebraska, and superintendent of the Norfolk State Hospital for the Insane; died in San Diego, Cal., December 10, from carcinoma of the stomach.

William Brashear Pusey, M.D. University of Louisville, Ky., 1887; a member of the American Medical Association; a specialist in diseases of the eye, ear and throat; died at his home in Louisville, December 6, from acute nephritis, aged 43.

Thomas Peare Sappington, M.D. University of Maryland, Baltimore, 1869; a member of the Medical and Chirurgical Faculty of Maryland; of Unionville, Md.; died in a sanitarium at Catonsville, Md., December 8, from nephritis, aged 62.

Lindsey S. Brown (license, registration, Wis., 1899); a member of the State Medical Society of Wisconsin; an oculist and for forty-one years a practitioner of Madison; died at his home, November 24, from cerebral hemorrhage, aged 69.

Arthur Page Belew, M.D. University of Virginia, Charlottesville, 1870; a member of the Medical Society of Virginia, and vice-president of the Shenandoah County Medical Society; died at his home in Edinburg, December 4, aged 61.

John Watts Miller, M.D. Medical College of Virginia, Richmond, 1861; surgeon in the Confederate Service during the Civil War; of Sulphur Springs, Tex.; died at the home of his daughter in that place, November 28, aged 77.

Harrison H. Guthrie, M.D. Rush Medical College, Chicago, 1863; a surgeon during the Civil War; and later a practitioner of Minnesota; died at his home in San Bernardino, Cal., November 30, from senile debility, aged 77.

Charles M. Fisher, M.D. Kansas City (Mo.) Medical College, 1900; a member of the Kansas Medical Society; died at his home in Hanover, Kan., December 6, from pneumonia following typhoid fever, aged 35.

Joseph Lester Johnson, M.D. Bellevue Hospital Medical College, New York City, 1891; a member of the Medical Society of the State of New York; died at his home in Riverhead, L. I., December 2, aged 40.

Fidelia Green Campbell, M.D. College of Physicians and Surgeons, Boston, 1890; Salisbury, Mass.; died in the Homeopathic Hospital, Newburyport, Mass., December 4, after a surgical operation, aged 55.

James Pinkerton, M.D. Medical Department of Victoria College, Cobourg, Ont., 1865; a resident of North Dakota for more than a quarter of a century; died at his home in Rolla, December 7, aged 75.

Henry H. Harris, M.D. University of Pennsylvania, Philadelphia, 1860; a member of the Medical Society of the State of North Carolina; died at his home near Wake Forest, December 6, aged 75.

James H. C. Robinson, M.D. Kansas City Hospital College of Medicine, 1885; a practitioner of Missouri since 1856; died at his home in St. Joseph, December 3, from senile debility, aged 77.

John Sylvester Brown, M.D. New York University, New York City, 1891; was found dead in his apartments in Sacramento, Cal., December 1, from dilatation of the heart.

Gilbert Hopkins Swezey, M.D. Bellevue Hospital Medical College, New York City, 1869; of Bay Side, N. Y.; died at North Falmouth, Mass., October 6, aged 68.

Thomas Clark Coleman, M.D. Gate City Medical College, Texarkana, Tex., 1905; of Malta, Tex.; was shot and killed in that place, December 3, in an affray.

George Edmund Husband, M.D. Hahnemann Medical College, Chicago, 1861; died at his home in Hamilton, Ont., October 1, from cerebral hemorrhage, aged 70.

Frank Rieser, M.D. Pennsylvania Medical College, Gettysburg, 1852; died at his home in Reading, Pa., December 4, from heart disease, aged 79.

Thomas Maxwell Carroll, M.D. Cincinnati College of Medicine and Surgery, 1874; died at his home in Springfield, Ohio, December 7, aged 71.

Charles Galen Smith, M.D. Jefferson Medical College, Philadelphia, 1897; died at his home in Beaver Springs, Pa., September 29, aged 34.

Joseph W. Reynolds (registration, Md., 1892); died at his home in New Bridge, Md., November 25, from disease of the stomach, aged 74.

Charles Kelly Myers, M.D. Cincinnati (Eclectic) 1849; died at his home in Stockton, Cal., October 13, from cerebral hemorrhage, aged 81.

Edward Francois Painchaud, M.D. McGill University, Montreal, 1848; died at his home near Klotzville, La., December 5, aged 86.

Cuthbert Reese Barham, M.D. University of Virginia, Charlottesville, 1890; died recently at his home in Boykins, Va., aged 41.

John J. Mitchell, M.D. University of Louisville, Ky., 1875; died recently at his home in Beaver Dam, Ky., aged 62.

George W. Sullivan (license, Mo., 1883); died at his home near La Belle, Mo., December 1.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Lodge Practice in Pennsylvania

Dr. G. D. Thomas, writing from Meadville, Pa., regarding the efforts made by the local physicians to repress lodge practice and contract work, says: "It is surprising how easy it was to convince those physicians engaged in this work that it was wrong in principle, and how readily it was abandoned. Without bitter condemnation, but with friendly reasoning, every doctor in the city signed the resolution agreeing to cease contract practice work for lodges and fraternal societies. The fact that for $2 a physician was expected to treat for a year all members of a family under 18 years of age, be the members two or a dozen, was easily shown to be unfair to the public and an injustice to the profession. The public, with few exceptions, see the matter in the same light, and up to the present, no one has been prevailed on to come from the outside to enter into a contract to do the work abandoned by local physicians."

The essential and distinguishing feature of objectionable contract practice, as shown in last week's Journal, is the existence of a middleman who buys the physician's services at wholesale and sells them at retail, thus farming out the physician to the public under an agreement whereby the physician gets a pittance and the patient gets poor services, while the middleman alone, who reaps the difference as his profit, is the gainer. If the question can be placed in this, the true light, before both the public and the profession, there is little doubt as to the outcome.

Postgraduate Course

The postgraduate program was given last week.

Medicolegal

Suits for Fees and Malpractice Not Allowed to be Consolidated

The First Appellate Division of the Supreme Court of New York says, in the case of Martin vs. Prentice (118 N. Y. S. 215), that the defendant, a physician, sued the plaintiff in the municipal court for professional services. Two days later, and before answer in the municipal court, the plaintiff began this action for damages for malpractice. Thereon an order was made, consolidating the municipal court action with this action, and authorizing the defendant physician to interpose as a counterclaim in this action the matter alleged as a cause of action in the municipal court. But that order could not be sustained. Section 817 of the New York Code of Civil Procedure authorizes a consolidation of two or more actions in favor of the same plaintiff against the same defendant, where the causes of action are such as may be joined. Section 818 authorizes such a consolidation where one of the actions is pending in another court, when this court may remove the action and consolidate it with an action pending here. But the two sections must be read together, and are applicable only where they are in favor of the same plaintiff. Such was not this case, and the sections cited furnished no authority for the order. The defendant had a right to bring his action in the municipal court, a forum of his own choosing, and could not be compelled to abandon that forum and interpose his demand as a counterclaim in an action which he could not control in another forum. But Justice Laughlin, while agreeing that the court was without jurisdiction to consolidate the two actions, says that he is of opinion that the Supreme Court should have stayed proceedings in the action in the municipal court until the trial and determination of this action, because the municipal court did not have jurisdiction to award the plaintiff in this action the judgment which he demanded against the physician for malpractice, and a judgment in the municipal court in favor of the physician for his services would bar the action for malpractice.

Physical Examination Refused as Interference with Trial

The Supreme Court of Georgia holds, on the appeal of Macon & Birmingham Railway Co. vs. Ross (65 S. E. R. 146), that the power of a trial court to require a plaintiff, suing for a physical injury alleged to be permanent, to submit to an examination by a competent physician, at the instance and expense of the defendant in order to ascertain the nature, extent, and probable duration of the injury, is one to be exercised or not according to the sound discretion of the presiding judge, under the facts of the case; and a refusal to require such a submission will not be reversed, unless his discretion has been abused. And where the motion for a new trial showed that a motion of the character above indicated was made several times during the progress of a trial, but was refused by the presiding judge on the ground that he could not grant the application without interfering with and delaying the trial, and there was nothing to show any abuse of discretion in such ruling, a reversal will not be granted on that ground.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

December 4

1 An Appeal. S. A. Knopf, New York.
2 *Infantile Scurvy Involving the Hip Joint. N. Jacobsen, Syracuse.
3 *Disguised Starvation and the Reasoning Faculties. N. Rosewater, Cleveland.
4 *The Present Status of Stomach Lavage. C. D. Aaron, Detroit.
5 *Symmetric Lymphomata of the Lachrymal and Salivary Glands (Mikulicz's Disease). S. L. Ziegler, Philadelphia.
6 Tuberculosis and Pregnancy. M. Fishberg, New York.
7 The Infancy of the Practice of Medicine and Surgery. H. Pomeranz, New York.
8 Surgical Treatment of Atrophic Rhinitis. J. G. Wilson, New York.
9 Bacteriologic Examination of the Mouth and Fauces. B. R. Le Roy, Athens, Ohio.

2. **Infantile Scurvy Involving the Hip Joint.**—Jacobsen reports two cases. The first patient, a boy a little less than a year old, had always been weak, and not until he was seven months old was he able to sit up alone. Prior to that time his back had been too weak to support him, although he was fat and when lying down gave one the impression of being well. On Thanksgiving day, 1908, he fell from a chair, striking on his left hip and thigh, although there had been no evident bruise. The extremity could not be moved or even touched without causing great pain. For several months prior to the receipt of this injury, the child's gums had repeatedly bled. He had also had frequent discharges of blood with the movements of his bowels. The child apparently was well-developed, but pale and fretful. He would begin to cry as soon as he was lifted out of bed. There was no apparent wasting or deformity of the extremities. The left leg and thigh were held in a flexed position. The right leg could be moved freely without causing any pain and no other part of the body was evidently affected. However, the slightest manipulation of the left lower extremity caused him to cry out. There were no changes in the gluteal cheek nor in the creases between the nates or below the buttock. There was, however, marked fixation of the hip associated with exquisite tenderness. The gums were found spongy and bled easily. The child had been brought up on a patent food. Recognizing the condition to be one of scurvy, the dietary was changed. Because of the very acute and evidently marked disturbance in and about the joints weight extension was applied for a time. Immediately improvement followed and within a very short time the child was free from pain, slept naturally, and began to improve in color and vigor.

The first evidence of disturbance in the second case had been observed during the early days of November, 1908. In attempting to put on the child's shoes he would cry, and from this time on there was marked pain in his lower extremities, more pronounced in the right than in the left. While affecting both hip joints, there was also some disturbance in the knee. It was impossible to raise the child out of bed, because at each effort to lift him he cried out. The child had had nose-bleed frequently for about 6 months, and for 2 months there had been daily hemorrhages from the gums. Examination did not disclose any swelling or marked change about the knee joints, except that they were very sensitive. The hip joints, particularly the right one, were rigid and tender. There was no wasting of the thighs or buttocks and no indication of muscular atrophy so characteristic of hip joint disease. The gums were swollen and spongy, especially in the neighborhood of the upper central incisors. This child was being fed on peptogenic milk powder. After the change in his dietary and without any medication or attention to the local condition, the patient improved at once and within a week was entirely free from pain and discomfort.

3. **Disguised Starvation.**—According to Rosewater, disguised starvation is prevalent everywhere from an unconsciously insufficient food intake (mainly from economy, worry, and ignorance), causing an atonic state and rendering the underfed powerless to maintain normal function, susceptible to many intercurrent diseases, unable to resist tuberculous and other infections, while tending toward mental and physical bankruptcy. The lower animals follow instinct, especially instinct of appetite, because possessing no other controlling faculty. Man's highest faculty, reason, presides over his instincts—appetite, fullness, satiety, etc., giving to these due but not undue credence and weight in deciding and controlling his final acts. The application of this hitherto unrecognized principle regarding the control of our wants by reason is as follows: Man's yielding to overindulgence of food through uncontrolled appetite, also his repeated refusal to eat through lack of appetite are, as a rule, physiologic errors and injurious to health. Having no appetite is no excusable criterion for insufficient eating, since man possesses abundant processes for digesting his food, even without appetite, and can force himself to eat, in spite of lack of appetite, fulness, or even disgust, through the supreme control and guidance, by his reasoning faculties, of his force of will.

To save all these classes from the results of disguised starvation, the public should be educated to know by tables of normal weight and height; those too far to either side of the normal range, should be taught to use good reason, judgment, and will, so as to get within the normal range by controlling the quantity, quality, and time of their meals.

Under the supremacy and influence of man's reasoning faculties, his strong desire for drink and drugs, and his other habits are restrained and controlled, his despondency and other vicious mental and nervous states that inhibit or depress his normal functions are overcome by hope assured, cheerfulness, and other human virtues substituted as tonics for his vices.

4. Abstracted in THE JOURNAL, Sept. 25, 1909, p. 1047.

5. **Lymphomata of Lachrymal and Salivary Glands.**—Ziegler reports two cases of what is known as Mikulicz's disease. Both patients were colored. In the first case no medicine was administered, but the tonsils were thoroughly excised. Free breathing was at once established. Retrogression of the submaxillaries began promptly, followed by the parotids, and finally included the lachrymals. In the second case, a double tonsillectomy was performed, and the uvula was excised. The throat healed rapidly. Free nasal breathing was established and the physical condition improved. The first retrogressive symptom noted was the softening of the lachrymal and submaxillary glands after about one month. Ziegler holds that the syndrome of the symmetrical enlargement of the lachrymal and salivary glands is sufficiently characteristic to be accepted as pathognomonic of Mikulicz's disease. The enormous lymph cell infiltration into the interstitial tissue, and the relative passivity of the gland structure, demand that this tumefaction shall be classed as true lymphoma or lymph tumor, as distinguished from adenoma or tumor of the glandular substance. Respiratory obstruction not only hinders the evaporation and drainage of these sinus secretions, but also causes suboxidation and other disturbances of metabolism. It should, therefore, be considered a true etiologic factor. The course of Mikulicz's disease is chronic, but the prognosis is favorable, with a tendency to relapse. The treatment aims to improve lymphatic action and systemic oxidation. All respiratory obstructions must be promptly and thoroughly removed. Extirpation is rarely indicated.

Boston Medical and Surgical Journal

December 9

10 *Relation of Posture to Human Efficiency and the Influence of Poise on the Support and Function of the Viscera. J. E. Goldthwait, Boston.
11 *Treatment of Stricture of the Bulbar Portion of the Urethra by Resection, Partial or Complete. H. Cabot, Boston.
12 *New Treatment for Abdominal Surgical Shock. J. R. Hopkins, Denver.
13 Diagnosis of Ulcer of the Duodenum. E. A. Codman, Boston.

10. **Relation of Posture to Efficiency.**—It is Goldthwait's belief that the way in which our bodies are used, or the attitudes assumed in the performance of all that goes to make up the routine of life, is of greater importance than is commonly supposed. To stand erect, to walk or move easily, to have the various parts of the body so perfectly adjusted that easy balance and graceful use must result, is to be desired for reasons of far greater importance than the esthetic. Such elements are of absolute importance for perfect health and the fullest economic efficiency, since use of the body in proper poise insures the least friction with consequently the greatest amount of energy available for whatever may be required of the individual. This is of importance not only because of the effect on the framework of the body, but because of the effect which it must have on the body as a whole. The human organism resembles in many ways a delicately balanced machine made up of many parts each related to the others, and that which we call perfect health is simply the proper correlation of all of these many parts. As a machine, it is intended for use, and when working rightly there is the minimum of friction, and consequently the efficiency of the individual is the greatest that is possible. Anything which results in a departure from this correlation or balance means strain or friction and represents a distinct waste of energy so that the efficiency is lessened. Under such conditions some one part may be, and usually is, strained more than the others, but it must be remembered, nevertheless, that no one part can be strained without affecting the whole.

11. **Treatment of Stricture of Urethra.**—Originality is not claimed by Cabot for what he describes as a combination of methods used by other operators with such personal modifications as have seemed desirable. With the patient in the lithotomy position, a free median incision is made down to the urethra, dividing the structures of the bulb in the median line and turning them aside. The stricture is then divided by a longitudinal incision about one and one-half inches in length. All excess of scar tissue should be removed, the whole strictured portion excised if necessary, and hemostasis obtained. The anterior segment of the urethra is then freely mobilized by separating the corpus spongiosum from its attachments until it can be joined to the posterior segment without tension. If it is necessary to divide the urethra completely, suturing should be begun on the roof, the sutures being passed from without inward, including all the structures of the corpus spongiosum and the urethra. When it has been found possible to leave the roof of the canal intact, suturing is begun at the sides in such a way that the longitudinal incision in the urethra is brought together transversely, somewhat after the method of a pyloroplasty. After about one-third of the circumference of the canal has been sutured, a No. 28 sound is passed into the urethra and the suture is completed about this so as to be sure that the canal is given full caliber.

The last suture closing the wound unites the two extremities of the longitudinal incision in the urethra, and by lengthening this incision the caliber can be increased to any reasonable extent. Next, the urethra is opened on the sound at a point as far behind the stricture as possible, and just sufficient to admit a No. 12 (English) soft rubber catheter. The wound is then sutured in layers, bringing together the muscular structures of the bulb as accurately as possible with interrupted sutures, and the skin is closed, except for a point at the lower angle through which the catheter is brought out. Resection is said to be applicable to all strictures of the bulbomembranous portion of the urethra not amenable to gradual dilatation and not complicated by infiltration of urine or fistulas.

12. **Abdominal Surgical Shock.**—The treatment advocated by Hopkins is said to be especially suitable for shock during the few hours or days following an abdominal operation, when the patient is not under an anesthetic, although it is probably beneficial when the patient is anesthetized, but not to so great a degree. It is described as follows:

Take out two skin sutures as near the umbilicus as the wound will permit, then pry apart the continuous sutures in the fascia and peritoneum and inject beneath the omentum, if possible behind the transverse mesocolon in the neigborhood of the posterior wall of the stomach, getting as near to the solar plexus as possible, saline solution at a temperature of 112 F. During the first two or three seconds the patient feels little or no pain, only feels that the hot solution is permeating among the intestines, but the remaining two or three seconds is much different; the pain is very severe, for then the splanchnic nerves, the solar and hypogastric plexuses are being strongly irritated by the heat and pressure of the hot salt solution. They are well known to be very sensitive. The patient not being under an anesthetic, the reflexes are not depressed by it. The irritation of the splanchnic nerves and sympathetic ganglia produced by the heat and pressure at once causes contraction of the intestinal arteries, veins and portal vein, and thus a marked rise in blood pressure. Really a shock is produced by the sudden pressure of this hot solution on this great and important part of the vasomotor nerve mechanism, but this shock is a sudden reversal of the phenomena of surgical shock. The radial pulse returns or its pressure is markedly increased. The glass tube is taken out quickly, a small piece of gauze laid over the wound, and a strip of adhesive plaster applied, then a tight abdominal binder to sustain the pressure. If this treatment should not succeed, Hopkins advises repeating it in one or two hours. In addition to the above treatment he uses hot salt solution by rectum, 10 ounces every two hours, principally on account of getting the heat near the hypogastric plexus and splanchnic nerves; also he advises giving full glasses of hot water to drink for similar purposes. Otherwise he does not disturb the patient with hypodermics or even raising the foot of the bed; just keep her warm and as comfortable and peaceful as possible.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

The Lancet, London

November 27

1 *[illegible] (Lectures I, II, III). T. C. Allbutt.
2 *[illegible] Antiseptic and Aseptic Methods of [illegible] Reference to Occurrence of Suppura- [illegible] and I. Back.
3 *Relation of Alcohol to Immunity. P. R. Parkinson.
4 Complications and Dangers of Nasal Surgery. H. B. Tawse.
5 Severe Case of Exophthalmic Goiter, in which Treatment by X-rays and Sour Milk Appeared to be Beneficial. J. C. Newman.

1. Published in *British Medical Journal*, Nov. 20, 1909.

2. **Antiseptic and Aseptic Methods.**—Pendlebury and Back show by a comparison of results the superiority of aseptic over antiseptic methods.

3. **Relation of Alcohol to Immunity.**—Parkinson found that alcohol in small quantities has no action on the phagocytic activity, nor has it any action on the phagocytic activity until it is present in 12.5 per cent. strength. Small quantities of alcohol injected into rabbits may stimulate the production of antibodies temporarily. A large dose lowers the opsonic index for 24 hours. Continuous moderate doses cause a permanent lowering of the opsonic index. Parkinson found that the reacting mechanism to vaccines is much less effective in alcoholized rabbits than in normal rabbits; the difference is still more marked when living micro-organisms are used.

British Medical Journal, London

November 27

6 *Syphilis and Aneurism. W. Osler.
7 *[illegible] Name (continued). T. C. Allbutt.
8 *[illegible] and Inhaler; Its Use in Mountain [illegible]
9 [illegible] Treated by Early Massage and Move- [illegible]gs.
10 *Employment of Silver Wire to Bridge Gap after Resection of a Portion of the Lower Jaw. S. White.
11 *Case of "Giant Feet." H. Stevenson.

6. **Syphilis and Aneurism.**—Osler says that at a low estimate we may place the mortality from syphilis at between 6,000 and 7,000 annually, about 1 in 80 of the deaths, not taking into account the unestimated and very large number of stillbirths. In about one-seventh of the cases the deaths are due to what we regard as the more direct effects of the disease; aneurism and the enormous group of affections of the nervous system represent later, but none the less definite, effects of the poison. There are four lines of attack possible. The first is a wholesome and healthy education of our youth in matters sexual, pointing out plainly the necessity of continence, though a hard condition; the really terrible risks, and the sad train of events likely to follow an infection. Secondly, steps should be taken to lessen "the sight of means," as the proverb puts it, the open, flagrant whoredom. Thirdly, venereal diseases should be put in the same category as other acute infections of public dangers, and every case should be known, registered and supervised. Lastly, much may be done to lessen the ravages of the disease by increasing everywhere the facilities for early and prolonged treatment.

7. Published in *The Lancet*, Nov. 27, 1909.

8. **Oxygen Generator and Inhaler.**—Hill's apparatus is intended for use in places and under conditions where cylinder oxygen cannot be obtained easily for patients with heart disease, asthma, etc., who are in a state to manipulate the apparatus, and particularly for use in mountain sickness. Its portability and lightness make it suitable for transport, and it can be used wherever a pint or two of water can be obtained. The apparatus is of less use in cases of pneumonia, etc., in which oxygen can only be tolerated when administered through a funnel or a light mask, and away from big cities where oxygen cylinders cannot be obtained, for successive bag full can be made and the gas pressed out through the funnel or mask. The apparatus consists of a small metal box—the generator—connected with a vulcanized rubber bag—the breathing bag. The bag holds about 15 liters, and ends in a rubber mouthpiece. The bottom of the generator is closed by a screw cap and asbestos washer, and a piece of wire gauze is interposed between the generator and the bag. The mouthpiece is closed with a screw-clip during the generation of gas. Oxygen is generated from sodium peroxid by contact with water, and a solution of caustic soda results. The caustic soda solution is used to absorb the exhaled carbonic acid.

10. **Silver Wire After Resection of Portion of Lower Jaw.**—White removed two inches of the lower jaw of a boy 9 years old for sarcoma. The bone was divided in front at the level of the left canine tooth, and behind just above the junction of the body with the left ramus. The periosteum covering the lower border of the excised segment was carefully preserved. The resected surfaces of the lower jaw were pierced with a drill to the depth of ¾ inches. The drill hole in the body was horizontal, and placed near its lower margin so as to miss the teeth roots; that in the ramus was vertical and somewhat posterior to the mandibular foramen. The ends of a suitable length of stout silver wire were jammed tightly into the drill holes, and the wire completely covered by suturing together the mucous membranes of the cheek and the floor of the mouth over it. The boy can open his mouth almost to the full, and when the jaws are closed the teeth on the right side meet accurately those in the corresponding side of the upper jaw. He is able to bite soft things, and has to be restrained from attempting greater masticatory feats.

11. **Giant Feet.**—This boy, now 4 years of age, was apparently a normal child at birth with the exception of deformity of the toes and some enlargement of the ball of the left foot. At the age of 6 months he was vaccinated, and about the same time lumps in the leg and groin appeared. Gradually the enlargement extended toward the armpit; the arms at the same time getting thinner. Present condition: The two inner toes of the right foot are normal in development, the three outer toes are very much enlarged, resembling small tubers; they are acutely dorsiflexed, and arise from a much thickened sole pad. The left foot is even more deformed, only the inner toe escaping, and the characteristics described on the right side

are more exaggerated. The left leg, thigh, groin, and infrascapular regions are sites of large fatty tumors, while a single large one is also present on the right buttock. When the child is standing there is well-marked lordosis, due apparently to the weight of the tumor in the groin, and possibly to some intra-abdominal growths. The skin is everywhere normal in appearance, and a section from one of the tumors had the ordinary characteristics of a lipoma and presented no evidence of angiomatous structure.

Annales de Médecine et Chirurgie Infantiles, Paris

November 15, XIII, No. 22, pp. 757-792

12 Infantile Scorbutus. (Deux cas de maladie de Barlow.) L. Concetti.
13 *Conservative Treatment of Chronic Glandular Lesions in the Neck. (Traitement des adénites chroniques sousmaxillaires et du cou.) B. G. Alvarez.

13. Treatment of Chronic Inflammation of the Glands in the Neck.—Alvarez regards the swelling of a gland as a sign of defensive reaction on the part of the organism against the invading germs. The gland may conquer and the germs succumb, and Nature has multiplied the number of glands at the points where infection is constantly threatening the frontiers—the skin and mucosæ. Treatment should aim to destroy the microbes imprisoned in the reacting gland, either by excision of the gland or by medical means. The latter includes the warding off of new infection by asepsis of the environment and antisepsis of the region through which the germs gain access to the glands. For the glands in the neck and under the jaw, this region is the skin and pharynx. The defensive reaction on the part of the gland is promoted, Alvarez asserts, by fomentation of the region with a saturated salt solution, general tonics and the stimulants of nutrition: air, light and electricity. He has frequently succeeded with these simple medical measures in curing groups of inflamed glands in the neck which otherwise would have required mutilating operations on account of their size and number and the long duration of the process.

Annales de l'Institut Pasteur, Paris

October, XXIII, No. 10, pp. 745-840

14 Immunity and Chronic Anaphylaxis in Regard to New Vegetable Toxin: Crepitin. (Toxine de Hura crepitans.) C. Richet.
15 Mechanism of Anaphylaxis. VIII. Besredka.
16 Intestinal Tuberculosis in Cattle. (Tuberculose intestinale chez le bœuf.) P. Chaussé. Concluded.
17 Production of Citric Acid by Citromyces. P. Mazé.
18 Antiphagins of Microbe of Fowl Cholera. N. Tchistovitch.

Revue de Gynécologie, Paris

October, XIII, No. 5, pp. 755-952

19 *The Hymen after Defloration. (L'hymen apres la défloration.) F. Jayle.
20 *Over-and-over Suture of Pedicles, etc., Preferred to Ligatures. (L'hémostase par la suture en surjet pour les pédicules vasculaires et les petits vaisseaux.) H. Chaput.
21 *Acute Hemorrhagic Pancreatitis. R. Leriche and L. Arnaud.
22 Villous Tumor of the Rectum. Vautrin.
23 *Diagnosis and Treatment of Stone in Female Lower Ureter. (Calculs de l'uretère pelvien chez la femme.) S. Pozzi and R. Proust.

19. The Hymen After Deflowering.—Jayle's article is accompanied by 33 illustrations. A number of conclusions are drawn which are important for legal medicine.

20. Over-and-Over Suture Instead of Ligature for Hemostasis.—Chaput gives illustrations showing the excellent effect obtained by an over-and-over suture and then tying the ends of the thread together. This draws the stump of the vessel up into a cone; this suture is easily applied; never slips, like a ligature; never sloughs off, and this method of hemostasis, he declares, should be preferred for all deep pedicles and small vessels which it is difficult to ligate in the depths of the wound.

21. Acute Hemorrhagic Pancreatitis.—Leriche reviews 96 cases of acute hemorrhagic pancreatitis on record, including some from his own practice, in all of which operative treatment was applied, with the cure of 25 patients. The patients not operated on all died. In 2 cases a second operation was required and the patients recovered. A secondary operation may be necessary also on account of gall-stones. In a number of the cases the patients have been in good health for years since the operation, the digestion practically normal. He discusses in detail the etiology, symptoms, diagnosis and treatment, adding four pages of bibliography. The pancreas is generally found more or less pathologic, the influence of gall-stones superposing another prominent factor for the acute syndrome. Changes in the circulation in the gland are the direct cause of the trouble, supplemented by the autodigesting action of the retained kinase of the pancreatic juice. The symptoms at first are generally those of liver colic, but the pain grows worse and persists, the location changing from the liver to the pancreas region; or the trouble may begin without a prodrome with intense pain in the epigastrium. It was so severe in some cases that the patient fainted. Death ensued in less than an hour after the first sign of trouble in Lenormant's case. The pain may radiate extensively but not into the shoulder. The temperature may be above or below normal; the pulse is slow, hard and firm, like the pulse of lead colic. Vomiting may occur at first but ceases later. The affection is rare in France, only 5 or 6 cases having been reported in the last three years, and it is rare likewise in Spain, Italy and Hungary; it seems to be most prevalent among people inclined to corpulence.

23. Stone in the Lower Ureter in the Female.—Pozzi gives a profusely illustrated summary of 91 cases in the literature, including 2 from his own experience, with especial regard to Roentgen and other means of differentiation and the best mode of access to the calculus. The calculus in one of his cases weighed 34.57 gm. and was 11 cm. long. He also discusses the cases of inflammation in and around the ureter simulating a calculus in various respects. In one such case two phleboliths cast a single shadow suggesting a ureter stone. Granulations in the bladder wall may also simulate ureter calculi in the skiagraph. Paraintestinal concretions may likewise prove deceptive in this way, as he shows by illustrations. Another source of error in one case was a cyst in the broad ligament with a cheesy center. In the cases reported the calculus was removed by a transvesical operation in 7, by nephrotomy in 8, by ureterotomy in 47, a combination of the 2 latter in 5, and by expulsion or extraction through the natural passages in 6 and 7 respectively.

Semaine Médicale, Paris

November 17, XXIX, No. 46, pp. 541-552

24 *Local Applications of Alcohol in Typhoid. L. Cheinisse.
25 Cleansing and Disinfection of the Sebaceous Glands by the Electric Current. E. H. Blanc.

24. Advantages of Alcohol Compresses in Treatment of Typhoid Fever.—Cheinisse protests against the routine use of the cold tub-bath in typhoid fever without individualizing, especially for children. The lifting of the patient is liable to do harm, while the action of the bath on the heart cannot be foreseen. Méry warns that the heart action must be closely supervised in children during the bath treatment, and in typhoid more than in any other disease. Cheinisse quotes Variot, Netter, Barbier and others who go still further and denounce the Brand method completely where children are concerned, on account of the frequency of cardiac complications in typhoid in children. Cheinisse regards the handling of the child in giving the baths as liable to favor hemorrhage and perforation, the emaciated abdominal wall of the child affording comparatively slight protection. He prefers treatment with alcohol compresses applied to the abdomen and has never witnessed any inconveniences from them while the course of the disease was rendered milder, the heart was stimulated instead of depressed, and convalescence was hastened. A pad of absorbent cotton or gauze in eight thicknesses is wrung out of 85 per cent. alcohol (90 per cent. for adults), and applied to the abdomen and covered with a gauze compress or cotton pad wrung out of cold water; over this there is an air-tight covering, the whole being held in place with a flannel band. The water compress is renewed every hour, the alcohol compress every two hours. He has applied this technic in twelve severe cases and has been much gratified with the result, the typhoid being modified into a milder form although no marked effect on the temperature was evident. These alcohol compresses were advocated originally by Salzwedel for phlegmons, and they have been used by Russian physicians and others in treatment of peritonitis and appendicitis, with good results. Cheinisse quotes Meyer's report of the cure of tuberculous peritonitis by this means alone; the active hyperemia induced attracts reserve forces to the disease focus, while the alcohol absorbed has a stimulating action on the heart. Last March Cheinisse witnessed the prompt recovery of a girl of 11 under the alcohol compresses which had evidently been effectual in transforming a severe typhoid with high fever and alarming nervous manifestations into a milder form, in which complete recovery ensued in a month. While in charge of this case he was called to see another child, about the same age, with slight bronchitis, high fever and a little rumbling in the right iliac fossa. He diagnosed typhoid and ordered alcohol compresses. This diagnosis was not accepted by the family and another physician was called who confirmed the diagnosis of typhoid, but ordered Brand treatment which was applied. Cheinisse received an urgent summons ten days later and found the child suffering from perforation peritonitis to which he succumbed notwithstanding immediate removal to a hospital and operation. These two cases occurring simultaneously, one with a threatening onset but prompt recovery under the alcohol, the other commencing mildly but terminating fatally under Brand treatment, have confirmed him in his advocacy of the local application of alcohol.

Beiträge zur Klinik der Tuberkulose, Würzburg

XIV, No. 3, pp. 259-357. Last indexed November 27, p. 1868

26 *Arneth's Neutrophile Leucocyte Formula in Diagnosis of Tuberculosis, etc. (Bluntuntersuchungen nach der Arnethschen Methode im allgemeinen und in der Tuberkulose im speziellen: 102 von uns untersuchte Fälle.) K. Dluski and M. Rospedzihowski.
27 *Paravertebral "Bronchial Gland" Dulness in Early Diagnosis
of Tuberculosis. Inter-
skapularraum und und
spezifische Therapi

26. **Neutrophile Leucocytes According to Arneth's Formula in Tuberculosis.**—This extensive monograph fills 74 pages, giving an impartial summary of the opinions for and against *Arneth's explanation of the blood picture in infectious diseases* and the proportions of the neutrophile leucocytes as characteristic for various affections. The fundamental idea is that the older polynuclear cells are the antitoxin-bearers or producers and that the degree in which they are destroyed by the action of the infection is characteristic, both for the specific affection and for the resisting powers. Arneth's formula was explained in The Journal in 1904, xlii, 494, and xliii, 577. Dluski reports the findings in respect to this formula in 102 cases of tuberculosis and in a large number of other affections. The bibliography of the subject is also given in full. The findings were constant in the tuberculous patients, while nothing of the kind was observed in 10 healthy controls. The findings were strictly in accordance with Arneth's premises in only 86 of the cases, but this number is too large to be a mere coincidence. His formula has undoubtedly a solid scientific basis. In the 86 cases mentioned the formula varied with the progress of the disease or recovery.

27. **Paravertebral Dulness in the Interscapular Space as Early Sign of Tuberculosis.**—Kraemer has for years noticed in certain cases changes in the resonance between the spine and the angle of the scapula with other signs of a lesion in the lung. The cause of the dulness is some affection in the bronchial glands which does not become manifest by percussion until the circulation of the blood and lymph is interfered with in the region. This "bronchial-gland dulness" between the shoulder blades is one of the most frequent signs of tuberculosis and the findings are confirmed by Roentgen examination. The changes in this dulness under tuberculin treatment are an index of the results being obtained. Discovery of this anomaly in the bronchial glands enables successful tuberculin treatment of the tuberculous process to be applied in its incipiency, without interfering with the usual occupation of the patient. He adds several skiagrams showing the shrinking of the area of dulness in the course of treatment of some patients and its extension in the uncontrollable cases.

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28 *Prophylaxis of Tuberculosis. A. Czerny.
29 Gaucher's Type of Splenomegaly. P. Rettig.
30 *Walking Case of Epidemic Cerebrospinal Meningitis. (Klinischer Beitrag zur Kenntnis der ambulatorischen epidemischen Genickstarre.) A. Géronne.
31 Wassermann Reaction in Milk. (Wassermann'sche Reaktion mit Milch.) O. Thomsen.
32 *Favorable Outcome of Forcible Correction of Hump in Pott's Disease. (Resultate des Redressements des Pott'schen Buckels.) G. A. Wollenberg.
33 Finding of Chlamydozoa in Non-Gonorrheal Ophthalmia Neonatorum. (Chlamydozoenbefunde bei nichtgonorrhoischer Blennorrhoe der Neugeborenen.) L. Schmeichler.
34 Bacteriologic Study of the Tec
Stomatitis. (Die pleomorphen
des Zahnbelages und die fusi
Beust.
35 Microscopic-Bacteriologic Diagnosis of Gonorrheal Infection. K. Kutscher.

28. **Prophylaxis of Tuberculosis.**—Czerny thinks that great harm is done by not informing patients that they have tuberculosis when it is discovered. He also insists that the necessity for examining the health of domestics who care for young children is as imperative as in examining for a wet nurse.

30. **Walking Case of Epidemic Meningitis.**—Géronne has encountered a case of epidemic cerebrospinal meningitis which was not so severe as to interfere with the young man's continuing at his business as cashier in a lumber firm. The disease lasted for about two months.

32. **The Results of Correction of Hump.**—Wollenberg gives an illustrated description of two cases in which a severe curvature of the spine from spondylitic kyphosis was successfully reduced. Extension with cautious, graded pressure applied perpendicularly to the hump gave good results.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

Surgery, Its Principles and Practice. By Various Authors. Edited by William Williams Keen, M.D., LL.D., Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia, and John Chalmers DaCosta, M.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Volume V. Cloth. Pp. 1274, with illustrations. Price, $7 net. Philadelphia: W. B. Saunders Co., 1909.

Anleitung zur Diagnostik der Abdominaltumoren unter Zu-
grundelegu n Prof. Dr. G. L. Sacconaghi,
Dozent für l. Universität in Pavia. Trans-
lated from y V. Plitek in Triest. Paper.
Pp. 418, wi Verlag von S. Karger, Karl-
strasse 15, 1910.

A Manual of Normal Histology and Organotherapy. By
Charles Hill, Ph.I sistant Professor of Histology
and Embryology University Medical School,
Chicago. Second eather. Pp. 468, with illus-
trations. Price, W. B. Saunders Co., 1909.

The American Society of Tropical Medicine: Papers Read Before the Society and Published under its Auspices. Vol. 4, 1909. Paper. [Secretary, Dr. John M. Swan, 1818 Lombard Street, Philadelphia.]

A Text-Book of the Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D., Professor of Medicine and Clinical Medicine at the Medico-Chirurgical College. Ninth Edition. Cloth. Pp. 1326, with illustrations. Price, $5.50 net. Philadelphia: W. B. Saunders Co., 1909.

The Origin and Prevalence of Typhoid Fever in the District of Columbia. (1908.) Report No. 3, Bull. No. 52, Hyg. Lab., U. S. P. H. and M.-H. S. By M. J. Rosenau, L. L. Lumsden and Joseph H. Kastle. Paper. Pp. 160. Washington: Government Printing Office, 1909.

Dose-Book and Manual of Prescription-Writing. By E. Q. Thornton, M.D., Ph.G., Assistant Professor of Materia Medica, Jefferson Medical College of Philadelphia. Fourth Edition. Flexible Leather. Pp. 410. Price, $2 net. Philadelphia: W. B. Saunders Co., 1909.

A Text-Book of Physiology. By William H. Howell, Ph.D., M.D., LL.D., Professor of Physiology in the Johns Hopkins University, Baltimore. Third Edition. Cloth. Pp. 998, with illustrations. Price, $4 net. Philadelphia: W. B. Saunders Co., 1909.

A Text-Book on the Practice of Gynecology. By William Easterly Ashton, M.D., LL.D., Fellow of the American Gynecological Society. Fourth Edition. Cloth. Pp. 1099, with illustrations. Price, $6.50 net. Philadelphia: W. B. Saunders Co., 1909.

Annual Report of the Surgeon-General, U. S. Navy, Chief of the Bureau of Medicine and Surgery to the Secretary of the Navy for the Fiscal Year 1909. Paper. Pp. 199. Washington: Government Printing Office, 1909.

Examen et Séméiotique du Foie et du Pancréas. Par le Dr. Pron, membre adhérent de la Société de Médecine de Paris. Paper. Pp. 178. Price, 3 francs. Paris: Jules Rousset, 12 Rue Monsieur-Le Prince, 1910.

Practical Hydrotherapy. By Curran Pope, M.D., Professor of Physio-Therapy, University of Louisville Medical Department. Cloth. Pp. 646, with illustrations. Price, $6. Cincinnati Medical Book Co., 1909.

GENERAL INDEX

All *reading matter* in The Journal from July to December, 1909, inclusive, is indexed here. (For Current Medical Literature Index see pages 2218 to 2270). "Deaths," "Book Notices" and "Society Proceedings" are indexed under these titles at the ends of the letters "D," "B" and "S." Matter pertaining to the Association is under "American Medical Association." With the above exceptions, all matter is indexed under the most important word of the heading that was used in The Journal, and also under the subject heading. For instance, abscess of brain will be found indexed under "abscess" as well as under "brain." Such titles as "ocular manifestations, etc.," have been indexed under "eye." Cross references have been made wherever this was possible. It is also well to remember that, in looking up a certain subject, related words should be consulted, for example, chest, thorax; skull, cranium; bowel, intestines. The letters used to explain in which department the matter indexed appeared are as follows: "E" editorial; "O" original article; "C" correspondence; and "ab" denotes an abstract of an article that has appeared in full elsewhere. *Names of authors* of original articles appearing in The Journal are not given in this index, but are included in the Index of Authors.

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SOCIETIES

Abbreviations:
Acad.—Academy.
Am.—American.
A.—Association
Conf.—Conference.
Cong.—Congress.
Hosp.—Hospital.
Internat.—International.
M.—Medical, Medicine.
Pharm.—Pharmaceutical.
Ry.—Railway.
S.—Society.
Surg.—Surgical, Surgery, Surgeons.

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CURRENT MEDICAL LITERATURE

INDEX OF SUBJECTS

Explanation: The *reading matter which appeared in* The Journal *is not indexed here*, except the original articles and the abstracts of original articles. This index refers to the titles and the subjects of original articles published in the leading medical journals of the world, including The Journal, during the past six months. The titles of the articles and the names of the journals in which they appeared were listed weekly in the Current Medical Literature Department, and it is to them that references are here made. The figure in parenthesis refers to the paragraph; the number following to the page in The Journal. For instance, "Abdominal Tuberculosis, Surgical Types of, (66) 972—ab," refers to page 972 of The Journal, on which is found, in paragraph numbered 66, the title of the paper and the name of the author, viz., "Surgical Types of Abdominal Tuberculosis. W. D. Haggard." This title is listed under the journal in which the article appeared, the *Journal of the Tennessee State Medical Association*, August, 1909. When "ab" follows a page number it indicates that the article was abstracted in The Journal; for instance, "Abdominal Surgery, Prevention of Adhesions in, (54) 323—ab." On page 323, paragraph 54, will be found an abstract of this article, which appeared in *Surgery, Gynecology and Obstetrics* June, 1909. Titles of articles which appeared originally in The Journal are indicated in the index by an asterisk (*) before the page number; for instance, "Acanthosis Nigricans, *1369," refers to page 1369 of The Journal, on which is found the complete original article. The index to authors of all articles, both original and those listed under Current Medical Literature, appears separately on pages 2271 to 2286 of this index.

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